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ABSTRACT

This annual collection contains the following 14 papers about the use of Macintosh computers in libraries: "Of Mice and Macs: The Integration of the Macintosh into the Operations and Services of the University of Tennessee, Memphis Health Science Library" (Lois M. Bellamy); "Networking Reference CD-Roms in the Apple Library" (Mary Ellen Bercik); "In Splendid Isolation: The Macintosh at the University of the Arts Libraries" (Stephen Bloom): "A Shareware System Shared" (Carol Bonham); "Database Publishing by the Shores of the Chesapeake" (Kay Brodie and Claudia Jewell); "Business Sense: Using the Macintosh in a Business School Library" (Lene Byskov and Jorgen Albretsen); "Macintoshing the Special Library: A Case Study" (George H. Drury); "The 'Macintoshed Life'...in a Junior High School Library Setting" (Carol Felch); "Using HyperCard as a Promotional Tool" (Barbara Mattscheck); "It Started Slowly...and It Grew...And Grew...And Grew" (Mary E. Okarma); "The HyperCard Library Instruction Project" (Joan Parker); "How I Learned to Stop Worrying...(and Love the Macintosh)" (Barbara Passoff); "Reach Out and Type at Someone (or How I Found Happiness in Sleepless Nights on the Fidonet)" (Alan Rowoth); and "USCInfo: A Development Platform for Tomorrow's Information Rich Environment" (John Waiblinger). Also included are an introduction, "Survival of the Fittest: The Evolution of The Macintosh in Libraries" (Edward J. Valauskas); a directory of vendors; an index; and "Toolbox," a list of hardware, software, typeface, and output used in the publication of this collection. (ALF)

macintosh LIBRARIES

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Fourth edition.

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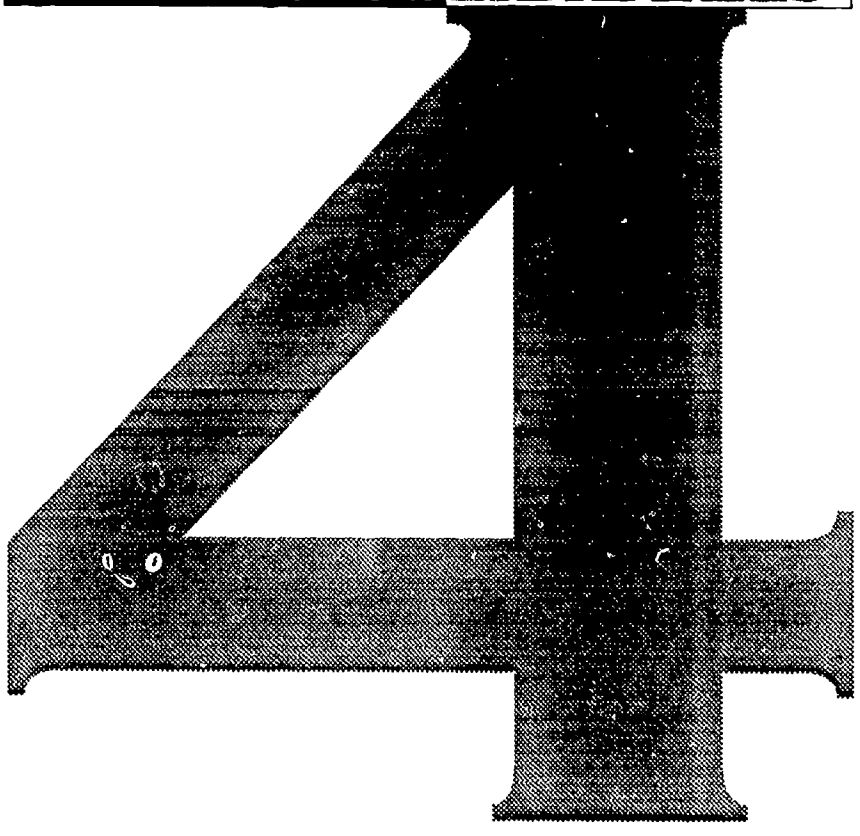
General Index and Product Index compiled by Edward J. Valauskas.

Special thanks to Nancy John, Monica Ertel and Patricia Tegler for their help in the making of this publication.

Also available as a *HyperCard* stack.

macintoshed LIBRARIES



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APPLE LIBRARY USERS GROUP
CUPERTINO, CALIFORNIA
1991

FORWARD

What is *Macintoshed Libraries?* It's more than just a collection of articles, case studies on the use of Macs in libraries of all sorts and sizes and persuasions in this country and abroad. It's more than signatures bound together into a book, words and sentences and illustrations deftly arranged on paper by Bill Vaccaro. It's more than a diskette and a neat hack of a *HyperCard* stack.

Thousands of copies of *Macintoshed Libraries* in all of its permutations have found their way around the world, since the first modest version appeared in 1987. It certainly must mean something to all of those who read it, who use it in classrooms, who catalog it and record it on bibliographic utilities like OCLC. I've had fans of *Macintoshed Libraries* complain to me that their archival copies disappear from the shelves in their offices, and that they taking the radical action of binding copies to retard thievery. What does *Macintoshed Libraries* mean to the biblio-kleptomaniac as well as the Library Director, the shelving clerk, the software developer?

Briefly, *Macintoshed Libraries* began with the premise of bringing together, in one place, experiences with the Macintosh in libraries. Its purpose was demonstrate that using a Mac in a library was a good idea, even if the computer had to come in through the loading dock or side entrance. For the most part, those days (and especially nights) of nocturnal Macintosh expeditions into the realm of library automation are long gone, dim memories of the Paleozoic of desktop computing. Now, it seems, at least for some institutions, such as the University Library of the University of Southern California described elsewhere in this volume, Macintoshes arrive in libraries and elsewhere by freight, and rail car, in the glorious sunshine and through the front door. In some small part, *Macintoshed Libraries* was a catalyst for this reversal of fortune.

As experiences with the Mac in libraries accumulated, we have seen the Mac become accepted and welcomed as a tool to accomplish the tasks of everyday life in library administration, reference, cataloging, acquisitions, and circulation. A new role has been born, as these essays so dramatically describe, of the Macintosh as a vehicle to promote the library as a resource, as a center of technology, as a primary nerve in the intellectual fabric of communities everywhere. This new role of the Macintosh as a catalyst for change in the image of libraries and librarians to me is exciting, challenging, and stimulating. No longer are the daily burdens of paperwork and filing and professional housekeeping in libraries onerously destroying any hope for demonstrating the true potential of libraries as information agents. Computers such as the Macintosh are relieving that burden, as these articles prove repeatedly, and allowing us to demonstrate aggressively the worth, the value of libraries to the fabric of our communities, be they be universities, colleges, corporations, or the local town and city.

Macintoshed Libraries, this annual arrangement of documents voluntarily contributed by authors from Denmark to California, is now no longer a brave display of believing in a computer, and its way of interpreting the world, in spite of the odds—bureaucratic, technologic, social—against it. *Macintoshed Libraries* has become a celebration of using technology as a tool, a hammer against tedium, a potion for inspiration. Like any other tool, it is almost becoming invisible in our hands and eyes and mind, as we integrate the Macintosh further and further into the fabric of our professional lives and use it in new ways that we would have never thought possible. At that vanishing point when the Macintosh is no longer special or unique or different in libraries, when it becomes a fixture like a pencil sharpener, dictionary, or globe, this collection of tales will be no more. I personally cannot wait for that day!

Ed Valauskas

TABLE OF CONTENTS

TABLE OF CONTENTS *CONT.*

TABLE OF CONTENTS *CONT.*

INTRODUCTION

Survival of the Fittest: Evolution of the Macintosh in Libraries

In the primeval soup of those PreCambrian days of library workstations and desktop computers, automation in libraries meant rooms filled with ponderous circuits encased in shelves of plastic and metal, sheathed in armour, attended by drones and their masters, cooled by the timeless whine of air conditioning. Computers for most libraries were a fantasy, best described in serious titled journals affiliated with institutions both large and well-endowed. There was little thought given to the possibility that computers might appear as labor saviours in ordinary libraries, the kind of library that populated most every school of lower learning, the kind of everyday library that stood near city squares and town halls, the kind of library that filled a demand for technical literature in all sorts of corporations and industries, the kind of library that occupied many a small building on campuses of average colleges and universities everywhere. Computers were a symbol that had little to do with everyday work, but had more to do with an attitude, and an appearance in the eyes of those who judge performance not on the quality of work but on the magnitude of the object used to accomplish a task.

Change came slowly as new computers, species of a family called Apple II, appeared, based on the notion of scaling a tool to the task at hand. These machines began to populate the landscape rapidly, filling an ecological niche, a need for word processing, database management, telecommunications, and accounting that opened the boundaries of the human imagination. Librarians quickly took these machines to replace paper files, to create databases, to dump difficult terminals, and access online data through modems and software, to create templates of letters and reports. A whole clan of librarians using these computers decided to formalize their behavior with an organization called the Apple Library Users Group, and communicate with each other in meetings and in a quarterly newsletter.

Evolution, in technology as in organisms, worked not as Darwin, saw it but as modern biologists and paleontologists record its history, in a mighty jump, a clear break with tradition. The Lisa, appeared with all of its weight, and drive, and memory, and price, as a completely different animal in these early halcyon episodes of desktop computing. Software was organized completely in the *Lisa Office,* around a single unifying theme, where word processor, and spread-

EDWARD J. VALAUSKAS

sheet, and database, and illustrator all worked together. Ideas transformed into a Lisa event were represented not by a string of characters, but by icons, symbols that actually looked like objects in the real world on a real desk. Navigation in this new computer was not by keyboard alone but by a new device called a mouse, with a tail that was caught in a port on the back of Lisa's shell. This computer could open to reveal huge boards, full of chips to control a large screen, new kinds of disk drives, and opportunities for inventing altogether alien ways of interacting with a machine. But the Lisa was a dinosaur of sorts. Its weight, shelves of manuals, strange new hard plastic diskettes, size and cost were beyond most librarians, except those in institutions devoted to the expensive cutting edge. The Lisa died a slow death, not before watching its electronic genetic code contribute to a new and more efficient version, a computer called the Macintosh.

Recorded in those slim pages of the *Newsletter* of the Apple Library Users Group of 1984, the first experiments with this novel cpu took place in a few libraries around the country. Often, these reckless adventurers into library automation were not the in-house experts, the high priests of all things electronic and digital, but those who were looking for another, any, way of obliterating the dual monsters of tedium and technological paranoia. The first Macintoshes in libraries in those faraway days were used for day-to-day chores of word processing, telecommunications and database surfing but with a difference. The interface, in all of its graphic wonder, invited users to experiment, to attach the word "fun" to their vocabulary for computer experiences. The first signs of this evolution in desktop computing in libraries, recorded in the geologic strata of long ago issues of the *Newsletter* of the Apple Library Users Group, appeared in a new logo for the Group designed by Kevin Justie, and the unabashed thrill of using a half-dozen fonts in two paragraphs of text authored by Monica Ertel.

As the Macintosh's popularity grew in libraries in 1985 and 1986, its functions as a database manager, word processor, and graphics machine grew and grew. There were brave souls experimenting with *MacTerminal* and *Red Ryder*, connecting to Dialog and online catalogs and mainframes. Macintoshes were becoming a vehicle for circumventing the bureaucratic order of standing in queue for programming jobs on some distant mainframe if an institution had access in some arcane way to those devices. For many, the Macintosh was their first taste of computing in a library and for them, it has not been their last.

With the introduction of laser printers and *HyperCard* and more powerful cpus, the Macintosh underwent another transformation but not in appearance or in philosophy. The Macintosh presented an entirely different way of accomplishing work in libraries. Documents could be prepared that had all the appearances of spending weeks with typesetters and other agents of ink. Bibliographic instruction radically changed its appearance with *HyperCard*. Those tedious and repetitive questions that cursed reference librarians evaporated with *HyperCard* stacks that identified the location of bathrooms, the dictionary, the atlas, and the card catalog. But *HyperCard's* navigational status was a mere waystation, as librarians used it to develop interfaces to

mainframes and remote electronic files, to create self-paced engines for students to learn library and other skills, and to invent new combinations of sound, text, and image to display the information edge that libraries and their staffs always had but never quite formulated in this multimedia manner.

Macintoshes in libraries in their latest evolutionary stage are no longer the handmaidens for ordinary, workaday chores. At the level of word processing and databases, Macintoshes have nearly become transparent, part of the fixtures, as tools to remove the burden of record-keeping and materials management. In their newest role in libraries, Macintoshes are limited only by the librarians' imaginations. Librarians are using Macs to defend and survive professionally in an increasingly competitive and aggressive society where the economical value of information has finally been established, where a premium has been placed on those who provide data as quickly, as efficiently, and as accurately as possible under any circumstances. In this social context, librarians are using the Macs to demonstrate, to advertise, and to promote their own utility, and the value of their organizations to society. Librarians indeed are agents of information. Long before knowbots are a reality in ROM, librarians have demonstrated their own functionality as corporeal masters of information, searching databases and book shelves on demand for the latest and most appropriate facts at hand.

Given the tempo of this evolutionary trend, Macintoshes and librarians have a great deal to anticipate in the next few years as the cpus themselves become more powerful and more portable and as software is more amenable and communicative across applications and computer platforms. At some point in the distant future, we will look back at the uses of the Macintosh over the past seven years as mere child's play, immersed in difficulties of electronic communication that will vanish as boundaries between and among computers disappear. Like those early press hands that worked with movable type centuries ago to circumvent the tyranny of scribes and the control of information by a few, we have experienced the transformation of computing from a private venture of a few to an experience within the grasp of many. We will indeed be fortunate if the evolution of the Macintosh brings us new tools that make our adventures in library computing appear trivial and commonplace.

Of Mice & Macs:

Integration of the Macintosh into the Operations and Services of the University of Tennessee, Memphis Health Science Library

LOIS M. BELLAMY

The University of Tennessee (UT), Memphis is the medical center campus in the state-supported UT system, which consists of four campus sites. UT Memphis is currently composed of seven colleges: Allied Health Sciences, Dentistry, Graduate Health Sciences, Medicine, Nursing, Pharmacy, and Social Work. Approximately 729 faculty members serve a student body of 1,747 and a house staff of 547. Faculty, students and staff may work in any of the 26 campus buildings and the seven local hospitals affiliated with UT Memphis. The collections of the UT Memphis Health Science Library and its clinical branch library, Stollerman Library, support the programs of the seven health science colleges and consist of 162,089 bound volumes and 2,111 current journal subscriptions.

In 1984, the computer center, now called the Biomedical Information Transfer (BIT) Center, at the UT Memphis began installation of an Ungermann-Bass high speed broadband wide area network, NetOne, to provide access to institutional computing resources. Over 2,500 ports in fifty campus and affiliated hospital buildings are now served by the network. During this same period, the university began to encourage and support the use of the Apple Macintosh computer for local data and word processing. Departmental Macintoshes are in many instances networked together to share resources such as file servers and laser printers. In addition, different departmental Macintosh local area networks (LocalTalk) across the campus are linked together for resource sharing. This sharing is accomplished by connecting the LocalTalk network to the campus-wide NetOne network through a Kinetics *FastPath* box, a hardware bridge. In addition, individual Macintoshes equipped with an Ethernet interface card can connect to NetOne in order to use Macintosh resources in other areas of the campus.

The Health Science Library acquired its first Macintosh in 1987 and installed a LocalTalk network in 1988. As of February 1991, there were five public access and three staff Macintosh Plus computers, nine staff Macintosh SE computers, a LaserWriter II, a LaserWriter Plus, an ImageWriter II, a Shiva NetModem, and a Macintosh II file server with six Apple CD-ROM players connected to the local area network. The Library's LocalTalk network, is connected to the campus-wide NetOne network by a *FastPath* bridge. In addition, there is one stand-alone public access Macintosh SE. Two Macintosh SE computers also reside in Stollerman Library. However, neither personal computer is networked to the main Library's LocalTalk network. This article describes how the libraries at UT Memphis have used the Macintosh to provide new services to users and to improve internal library operations.

Fig. 1: After a few introductory screens, the stack of the CAR (Computer-Aided Reference) Station at the University of Tennessee, Memphis Health Science Library gives the users four choices, to explore the Library physically or intellectually.

THE PUBLIC ACCESS MACINTOSH

The CAR Station[1]

At the Health Science Library, three levels of information services are provided to users during weekday

working hours. The staff at the Circulation desk answers directional questions and provides information on library services. Routine questions are referred to a paraprofessional who staffs the nearby information desk. Instructional, factual and research questions that require interpretation or exploration are referred to the reference, librarians. This arrangement works fairly well except when these professionals are very busy or unavailable, as in the evenings or on the weekends, when there is only a minimal level of service provided by one library assistant at the Circulation desk. Faced with this staffing dilemma, the reference librarians at the Health Science Library decided to explore using the computer as another way to provide help. This use is different from the use of computers in formal library instruction. Computer-aided instruction in the context of a course provides the user with information that he might need in the future. The function of computer-aided reference is to provide the user with specific information on demand.

In October 1987, the Library was awarded an institutional grant to develop a computer-aided reference (CAR) application using the Macintosh SE and *HyperCard* to answer common directional and instructional questions, as a first step. *HyperCard* was chosen because it provides a means to link both text and graphics in a variety of ways, without requiring both the user and developer to learn a sophisticated programming language.

The *HyperCard* CAR application consists of a home module, four information modules, and a help module. The home module welcomes the user to the Library and invites the user to click on a button to begin the program (Figure 1). After brief introductory screens, the user is presented with the four main choices: "Show me around!", "What can you do for me?", "Where do I find...?", and "How do I use...?"

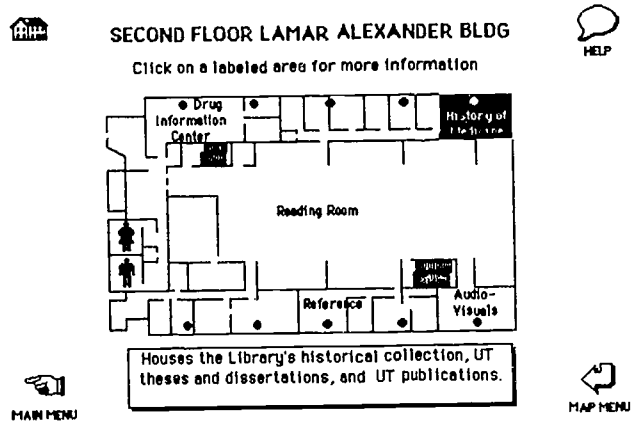

Fig. 2: By clicking the button labeled "Show Me Around!," maps are displayed of the floors of the University of Tennessee, Memphis Health Science Library. Clicking with the mouse on any of the identified area on the floor pulls up further details for the user.

The first two modules are intended to orient a new user to the Library, while the second two modules are intended to be used as needed. If the user selects "Show me around!", a choice of the Library floors is displayed. When the user clicks on a floor button, a floor map is presented. (Figure 2)

The user may click on any labeled area of the map for more information. In the "What can you do for me?" module, a selection of library services is displayed. When the user clicks on a selection, a brief description of the service is presented. The user may

click on any starred word in the description for more information. In the "Where do I find...?" module, library materials are grouped into main categories and subcategories displayed on different menus (Figure 3).

A click on an item in the first menu brings up a display of subcategories in the second menu on the same screen. When the user chooses an item from the second menu, a map is displayed with the location of the material highlighted. The last module, "How do I use...?", consists of tutorials on the use of reference aids such as Index Medicus. A click on Index Medicus results in a second menu display of instructional choices.

All screens contain buttons to allow the user to navigate back to previous screens. Help buttons are available throughout the program for instruction on how to use the program. Each help button is specific for the screen on which it is located. Asking for help provides information on describing the current the screen, how to use it, and options for navigating to previous screens. The user can also discontinue the session at any time. If the user fails to click on the screen after a specified length of time, the program asks if the user is still there and if not, resets itself. The application is self-explanatory and only requires the user to point and click a mouse to make selections.

Development of the CAR Station was begun in December 1987. The first three modules were completed in five months. The first instructional stack for the fourth module took another six months to complete. The CAR Station was placed into service in October 1988 and is located on the main floor of the library. At the time the CAR Station was made available to the public, there were no other computers or terminals available for public use. The Library had not yet automated its catalog. Therefore, it attracted attention and use. Directions were the most frequently asked questions. Now that the Library has terminals for access to its online catalog and stations for searching CD-ROM databases, the CAR Station is not used as often.

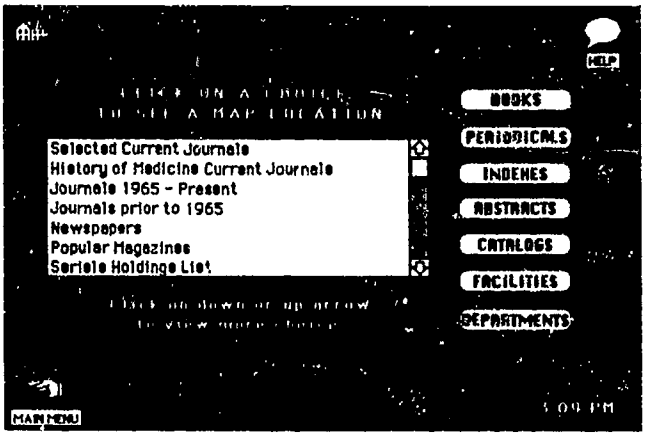

Fig. 3: Within the stack of the CAR Station is a module which acts as a guide to library materials. When the user selects a given item, a map appears showing the location of the specific title in the collection of the Health Science Library.

MEDLINE *Knowledge Server*[2]

In February 1989, the main Library installed the Macintosh version of MEDLINE on CD-ROM, *Knowledge Server*. This networked version, pro-

duced by Aries Systems Corporation, includes six CD-ROM disks, each containing one year of bibliographic entries with abstracts, and Macintosh-style search and retrieval software, installed on the Library's file server connected to a LocalTalk network. The Library file server is a Macintosh II with 5 Mb RAM and a 330 MB hard disk. Chained to the file server are six Apple CD-ROM players. Five Macintosh workstations and a public access

gram. Display, print, and download formats can be customized for the user needs. In addition, annotations can be added to a reference before printing or downloading it. A pull-down help menu is available. Reviews of *Knowledge Finder* have characterized it as a system designed specifically for end users, providing simple to use but somewhat unpredictable free text searching and excellent access to the MeSH[3-5].

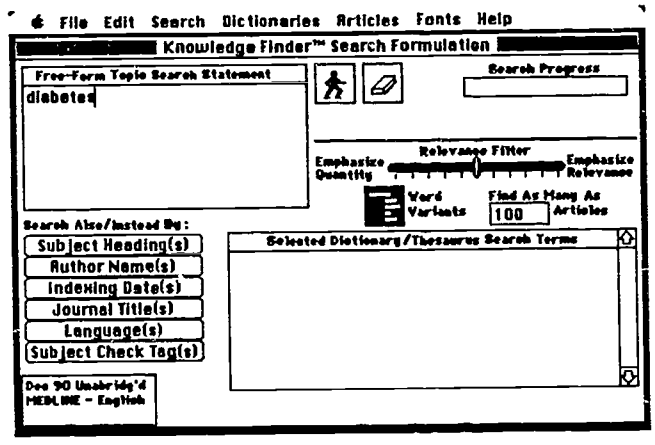

Fig. 4: *Knowledge Server* provides an interface for subject searches as free text or through the use of terminology standardized in the MeSH dictionary. The user also has the option of searching in *Knowledge Server* by author or journal title as well.

LaserWriter II have been available for use with the system in the Library since May 1989. In addition, the university community can access *Knowledge Server* from any LocalTalk network connected to the campus-wide NetOne network by a Fastpath bridge. According to Aries, the networked system supports six to twelve simultaneous users without serious search time degradation.

The system allows the user to perform subject searches either by entering a sentence-style expression (free text) or by selecting search terms from the MeSH dictionary (Figure 4).

The user may also perform author or journal title searches. References can be printed to a local printer or downloaded to disk for later use with a database or word processing pro-

For each search conducted, the *Knowledge Server* program records in an ASCII file residing on the Library's file server the date and time, the type of search, the search query, search duration, number of references found and their relevancy to the query, and the identification of the user. A scanning program was written to convert this data into *HyperCard* records in order to generate usage reports. A *Knowledge Server* version which records the user name became available in January 1990. User names identify the various Macintosh stations on the network. Since all Library station user names are known, this data permitted tracking of outside library use of *Knowledge Server.*

In the twenty months since the Library's five *Knowledge Server* work-

stations were opened to the public, approximately 74,000 searches have been performed. This number includes only those searches yielding at least one reference. Several *Knowledge Server* searches were usually performed to complete one "intellectual search" since users must conduct one search for each of the six yearly volumes of the MEDLINE data kept online or may need to try several search queries in order to find the desired references. Based on twelve months of *Knowledge Server* report data, library users searching at library workstations accounted for 82.3% of *Knowledge Server* use, outside users accounted for 10.2%, and library staff 7.5%.

When *Knowledge Server* was first installed, only the BIT Center, the Computer Lab, and the Radiology Department could access the database over a Fastpath box bridge. Since then, 36 additional Fastpath boxes have been installed to connect departmental LocalTalk networks to the campus-wide NetOne network so that MEDLINE *Knowledge Server* can be searched from office or lab. There are now approximately 350 Macintosh workstations in various campus buildings available for searching *Knowledge Server*. The system has proved so popular that the BIT Center maintains a Fastpath Box waiting list for departments requesting an installation.

Future Plans

The clinical branch library, Stollerman, is located in a building that houses the clinical faculty and is near the teaching hospitals. The users of the Library include third and fourth-year medical students, residents, fellows, and faculty. The staff use Macintoshes in their work; however, there is no public access Macintosh for searching *Knowledge Server*. The branch Library is in the process of installing a LocalTalk network that will be connected to a *FastPath* box. Each existing Macintosh will be connected to the LocalTalk network. In addition, a Macintosh Classic will be purchased for public use. Since the users of the branch Library are infrequent users of the main Library, this will give them the same access to local database searching that main Library users have been enjoying for nearly two years.

The public access Macintoshes in the main Library are Mac Pluses with external floppy drives. This hardware limitation means that they are only used to access *Knowledge Server*. The Library plans to upgrade these Macintoshes with more memory and hard drives so that they can be used for more than one function. In addition, I am in the process of developing a *HyperCard* interface that will allow the user to select either the computer-aided reference application, *Knowledge Server* or the Library's integrated system, Library Information System (LIS), that resides on the VAX. This procedure would eliminate the need for separate stations for separate functions.

Many users have expressed the desire to access *Knowledge Server* from home. While the Library does have a Shiva NetModem connected to its LocalTalk network, it is too slow at 2400 baud to offer access to *Knowledge Server* from home. I am working with Bell Communications Research (Bellcore) to test the use of ISDN (Integrated Services Digital Network) for accessing information from a CD-

ROM. ISDN transmits at 64-128 Kb/sec compared to a 9600 baud modem at 9.6 Kb/sec.

THE MACINTOSH AS THE LIBRARIAN'S WORKSTATION

All the librarians use their Macintosh computers for accessing LIS, for word processing, for keeping departmental statistics, and for accessing VAX electronic mail systems. The Cataloging Librarian uses *PacerLink TCP/IP* to connect to Internet-accessible online catalogs. She finds it useful to see how other libraries catalog materials that may not be in OCLC. The librarians involved in teaching use the Macintosh connected to a LCD (Liquid Crystal Display) overhead unit. Demonstrations on how to search the LIS online catalog, *Knowledge Server*, and external databases such as MEDLINE are greatly enhanced. Instead of static overheads, the participants can actually see in real time how the systems work. In addition, the Macintosh has been fully integrated into two library operations: document delivery request production in the clinical Library and online searching in the main Library.

Document Delivery Requests

One of the main functions of the Stollerman clinical branch Library is to provide a document delivery and interlibrary loan (ILL) service to residents and medical faculty. DOCLINE, an electronic ILL request service of the National Library of Medicine, is used for requests that must be filled by non-UT libraries. However, a large number of the requests are for items that can be filled by the main UT Library. Until November 1987, these requests were processed by typing the information onto multi-part ILL forms. One part was filed in a documents-requested box, and the others were sent by messenger twice a day to the main Library's ILL/photocopy service. Items requested were delivered by the messenger to the Stollerman Library. Stollerman staff then matched the filed copies with the requested items. Forms for loaned materials were placed in a date due box; forms for photocopied materials were filed in a transaction completed box. Each day the staff pulled forms from the date due box and wrote overdue notices or renewal requests as appropriate.

When the staff's typewriter could no longer be repaired, a Macintosh SE

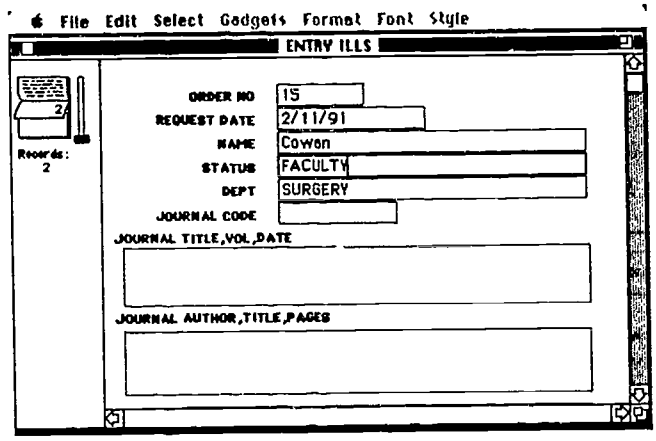

Fig. 5: The Stollerman Library of the University of Tennessee, Memphis provides document delivery and interlibrary loan services to residents and medical faculty When the Library's typewriter died, a Macintosh SE and Claris' *FileMaker* replaced the paper files. This screen represents the request form for document delivery in *FileMaker*.

and the general file manager, *FileMaker Plus*, were acquired to process document requests. The staff chose this combination for the following reasons: (1) a document delivery request form could be easily designed, (2) more than one form could be used with any file, (3) notices and statistical reports could be easily designed and generated, (4) look-up files could be used for automatic data entry, (5) default values could automatically be entered, and, (6) scripts could be used to perform several steps automatically.

The system consists of six files: Entry ILLs, Active ILLs, Inactive ILLs, Patron, Dept, and Status. The file, Entry ILLs, is used to enter new document requests (Figure 5).

Data such as order no., request date, authorized by, are automatically entered. Information about the requestor is stored in the Patron file. This file serves as a lookup file for the file, Entry ILLs. When the last name of the requestor is entered into a record of Entry ILLs, the status and department of the individual is automatically entered if the name is in the Patron file. When all the new requests have been entered into the Entry ILLs file, the request forms for loans and photocopies are printed. Once the requests have been printed, the records from the Entry ILLs are moved to the file, Active ILLs, and deleted from Entry ILLs. When requested documents arrive in the Library, the date received is recorded in the appropriate record in the Active ILLs file. If the item is a loan, a date is recorded in the date due field. Each day overdue notices and renewal requests are printed from the Active ILLs file. At the end of the month, statistical reports are produced from the Active ILLs file on the number of filled requests by department and by patron status. After the statistical reports have been produced, the filled ILLs are moved to the Inactive ILLs. At the end of the year, statistical reports can be produced from the Inactive ILLs. After the reports are produced, the records are moved into an archival file and deleted from the Inactive ILLs. New patrons can be added to the Patron file at any time. The Dept and Status files are used as lookup files in entering information in the Patron file.

Benefits derived from this system include a reduction in time spent in clerical activities and access to information difficult to obtain from a manual system. Filing of paper copy has been eliminated, and time spent in data entry has been reduced. Statistical reports of requests by department, user status, and journal title that would have required too much time to compile manually can easily be produced using the data entered into this simple automated system.

External Online Database Searching

In the main Library, the Macintosh is not only used for online searching, but it is also used for the production of statements and statistical reports that are associated with online searching. Until late 1988, a Texas Instrument dumb terminal was used for online searching. Searches were performed, the results printed on thermal paper, and statements prepared on the typewriter. The searches were then picked up in the Library or sent by campus mail to the search requestor. Now each online searcher has on her desk a Macintosh connected to the LocalTalk network with access to a Shiva NetMo-

dem. The searcher using *Red Ryder* communications software performs the search and downloads the results. Notes may be added to the search, and extraneous material may be edited from the search. The results may be mailed electronically, printed or copied to the user's diskette or file server. If the search requestor wants to receive the search results by electronic mail, the searcher logs into the DEC VAX using *PacerLink*, uploads the search file, and sends the search file via VAX Mail to the search requestor. If the search requestor wants to receive paper copy, the searcher puts the search into a drop box on the Library file server and sends a *Broadcast* message to the reference library assistant. The reference library assistant retrieves the file and prints it.

Search requests are received either over the telephone, by walk-in, or electronically via the VAX. Information about the search and the search requestor are included on a search request form. The searcher uses the form to formulate and perform the search, and the reference library assistant prepares a statement using the request form. Until the fall 1990, the library assistant prepared a multi-part statement on a typewriter. One part was given to the requestor; one part was kept in the Reference office; and two parts were sent to the Library's business office. From these statements, statistical information was manually compiled concerning the databases searched, the status of the requestor, and the requestor's department. When a search was charged to a university account number, each account number also had to be checked against a master paper list to determine whether it was a valid account. Since this was very time consuming, I designed a system using *FileMaker II* to make the process more efficient.

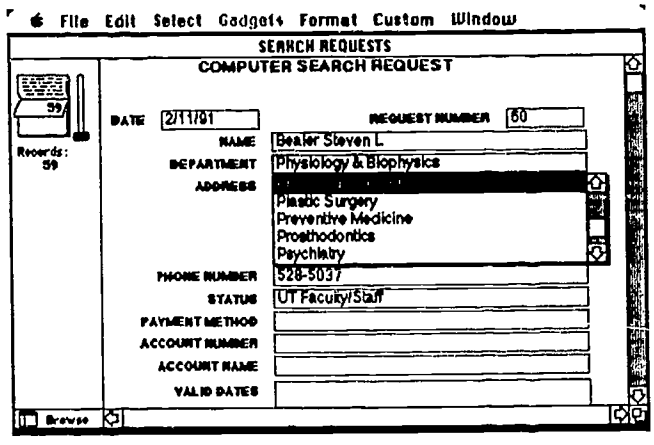

Fig. 6: Online requests are processed with Claris' *FileMaker* with four separate files to track accounts, users, departments and requests. In this example from the Search Requests file, information on the source of the original inquiry are logged in for further reference.

The *FileMaker* system consists of four files: Accounts, Users, Departments, and Search requests. The Search requests file is used for entering the information about the search request and the requestor (Figure 6).

Default data for some fields such as date, searcher, database searched and database cost are automatically entered. Some fields, such as search cost, are calculation fields which depend upon the information entered in other fields. Some fields such as requestor status, department, vendor, database, and searcher have pop-up menus from

which the data entry person can make an appropriate selection.

The Accounts and Users files serve as lookup files for the file Search Requests. When a requestor's last name is entered into a record of the Search requests file, the status, department, and college of the requestor is automatically entered if the name is in the Users file. New users can be added to the Users file at any time. The Departments file is used as a lookup file in entering information into the Users file.

When an account number is entered into a record of the Search requests file, the account name and its valid dates are automatically entered if the account number is in the Accounts file. If an account number is not present in the Accounts file, the library assistant calls the appropriate person for a correct number. New account numbers are added to and old ones terminated from the Accounts file as necessary.

At the end of the each month, the Search requests file is sorted by account number, and the statements are printed for the Library business office. Statistical reports are also produced on database usage, the status of the requestor, the college and department of the requestor, and request method. These statistics are then incorporated into the Reference Department's Microsoft *Works* spreadsheet. To begin a new month of data entry of search requests, the reference library assistant archives the previous month giving it a name such as Jan Searches, makes a copy of the Search requests file from a master, and begins data entry into an empty Search requests file.

The reference library assistant has found the system to be a great time-saver. She no longer has to manually arrange the statements by account number nor does she have to go through the statements tallying the statistical information. With just the click on a script name, she can have a report produced and printed in minutes. The account numbers do not have to be checked because they have been verified during data entry. And since the Accounts file is more up-to-date than the paper copy produced quarterly by the university accounting office, other departments in the Library are using a print-out from the file to verify account numbers.

SUMMARY

A fundamental purpose of the Library is to provide effective access to information regardless of its form. As more and more information is becoming available electronically, the Library must utilize an architecture to provide access as transparently as possible for both end users and staff. Indeed, since the size of the Library staff will not likely increase, it is necessary to search for more efficient ways to offer services to users. The Macintosh, with its consistent, user-friendly interface, is providing the UT Memphis libraries with solutions to both these problems. Public access Macintoshes are used for answering common directional and instructional questions about the Library and for searching a local CD-ROM database. Staff Macintoshes have virtually replaced the use of the typewriter with the result that less time is spent in producing written materials. It has replaced the Librarian's dumb terminal for accessing external and internal electronic sources resulting in increased functional capabilities. Fully integrating the Macintosh into two

library operations has resulted in reducing time spent in clerical activities and making easy access to information difficult to obtain from a manual system. The staff of the UT Memphis libraries continues to explore ways the Macintosh can be used to bring electronic information to the library user and to integrate the Macintosh into the libraries' operations.

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Networking Reference CD-ROMs in the Apple Library

by
Mary Ellen
Bercik

On November of 1990, SilverPlatter of Newton Lower Falls, MA released version 2.0 of *MacSPIRS* the search software for their Macintosh CD-ROM products. The most significant feature of version 2.0 is the ability to daisy chain CD-ROM drives and search the CD-ROMs over a network. We began beta testing *MacSPIRS 2.0* in the Apple Library in September 1990. To our delight, we found that with a minimum of effort we were able to network SilverPlatter's CD-ROMs and provide multi-user

access to them. Over two thousand Apple employees can search the Library's CD-ROMs from their desktop. This test was so successful that we are now working on implementing it as a regular reference service offered by the Library.

Background on the Beta Test

The Apple Library has been offering SilverPlatter CD-ROMs to our users since the Macintosh search software first became available in 1989. We beta tested *MacSPIRS 1.0* in September 1989 on three stand-alone Macs daisy chained to an ImageWriter printer. These stations, located near the Reference desk, received a fair amount of use and a positive response from our clients. When the beta test was complete, we implemented the CD-ROM stations as a regular reference service.

One year later, September 1990, beta version 2.0 arrived. We were really excited by the ability to network the CD-ROMs because one of the Library's primary goals has been to offer as many services as possible in an electronic format, both in the Library and remotely. *MacSPIRS 2.0* has helped us to move toward that goal.

At Apple, we are very lucky because large local area networks (LANs) are in place that link our buildings together. At the corporate headquarters in Cupertino, Calif. there are two very large local area networks: the Engineering net and the Information Systems & Technology net. These two networks are connected to an optical fiber backbone which serves as the infrastructure for our LAN system. In the Library, we run AppleShare over Ethernet to connect to the fiber backbone.

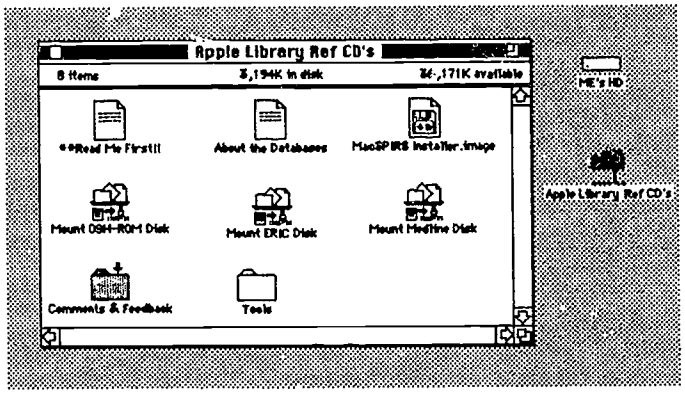
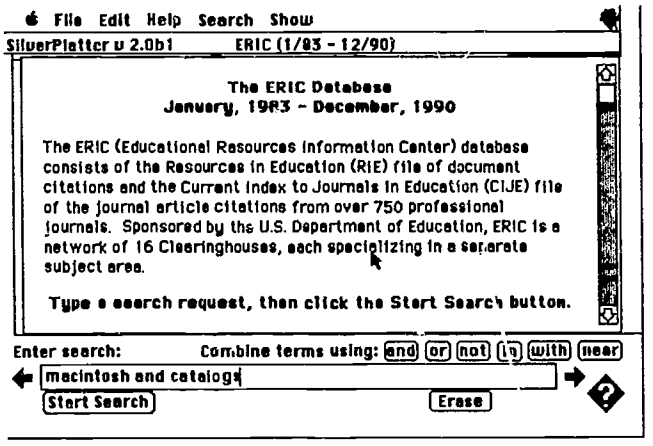


Fig. 1: This view of the Apple Library (Cupertino, Calif.) Reference CDs server displays the window of desktop with the *MacSPIRS* Installer document, tools and various tutorial documents. A comment box allows users on the network to send comments and questions to the Reference staff and the Network Administrator.

The Engineering net is used by employees in Research & Development (R&D), which include software and hardware engineers, computer and information scientists, hackers and all-around techie types. Because the Library reports into R&D, we also use this net on a daily basis. The Engineering net was the natural choice when we decided to mount our beta test of the CD-ROM file server. For the purpose of the test we wanted to run only one server, on one network. This would give us more control, allowing us to monitor the test closely and keep server maintenance to a minimum. Users on the Engineering net have high expectations for technology, so we knew we would receive varying

Fig. 2: MacSPIRS/ERIC Title Screen.



feedback and many suggestions from them. We weren't disappointed!

Database Selection

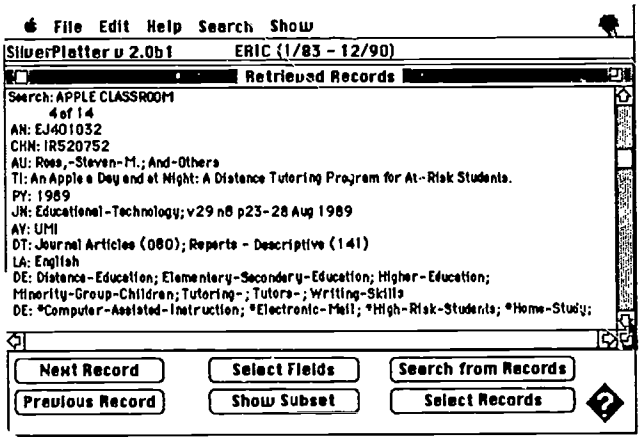
SilverPlatter offers a number of databases on CD-ROM for the Macintosh. For this test we selected public domain information, eliminating the need for licensing agreements with the database producers. We already had permission from SilverPlatter to network the CD-ROMs. We used ERIC, MEDLINE and OSH-ROM, which contains occupational safety and health information. With the exception of ERIC, these databases are somewhat peripheral to Apple's business, and some users questioned our database selection. When we implement this test as a full reference service, which we plan to do in the next few months, we will select databases which are more tailored to our users.

Hardware & Software Configuration

Our CD-ROM network runs on a Mac II with three AppleCD SC drives daisy chained to the Mac II through the SCSI (Small Computer System Interface) port. The Mac II has a 40 Mb hard disk and 8 Mb of RAM. This configuration is connected to the Engineering net by Ethernet.

AppleShare File Server software allows the Mac II to operate as a file server where we have stored the *MacSPIRS* application and various tutorial docu-

Fig. 3: MacSPIRS/Record Display.



ments. The *MacSPIRS 2.0* Installer file resides on the file server called the "Apple Library Ref CDs" server. (Figure 1)

The *MacSPIRS* search software must be installed on each user's hard disk from a "*MacSPIRS* Installer" floppy disk. Rather than have every user come to the Library to pick up a copy of the Installer disk, we created an electronic "image" of the disk and put it on the file server. Users could then create their own installer floppy from our disk image. We wrote step-by-step directions for the installation process, and in most cases people did not have many problems copying and running the installer software.

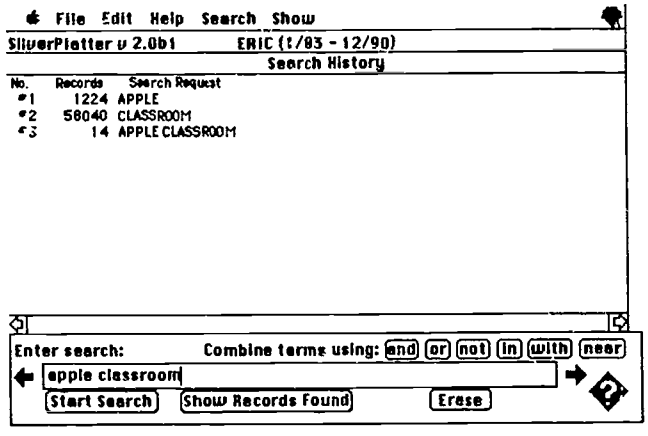
Staff Training

Previously, all Library staff received hands-on training on *MacSPIRS 1.0* at our CD-ROM stations. Training for *MacSPIRS 2.0* consisted of an explanation of the upgrade at a staff meeting, a description of the beta test, instructions for mounting the CD-ROM server, and an invitation to follow up with one-on-one training by a Reference staff member, if desired.

Reference Support for Users

Support for our users was provided in a number of ways. In the initial announcement of the beta test, which was sent to 2,100 employees, we provided phone numbers and electronic mail addresses for questions about the test. We had two phone numbers for technical support: the Reference desk and the number of the library's Network Administrator. We created a drop box on the server for questions or comments about the beta test. Comments and suggestions were followed up by a phone call to the client.

Fig. 4: MacSPIRS/Search Screen.



All Reference staff were trained in the installation of the *MacSPIRS 2.0* application, which we thought would pose the most problems for users. Support for searching the CD-ROMs, regarding search strategy or database content, has always been the responsibility of the Reference staff, so we were experienced with questions of this nature.

Using an in-house application, we created several documents which made access to the "Apple Library Ref CDs" file server almost instantaneous for our users. This application allows a designated path to a volume to be saved into documents for later use. This eliminated several steps in getting the CD-ROM databases from the library's server to the user's desktop.

User Feedback

Apple employees usually have an opinion, or at least a comment! We received immediate response from our users as soon as the announcement of the beta test was made. The feedback was overwhelmingly positive. People were very happy to be able to search bibliographic databases from their desks. The Apple campus is spread out over several miles, and this service definitely saves time for our clients. They also loved being able to do their own searching, free of charge. Users responded with comments such as, "This has saved us many trips to the Library" and "This is really Neat! Now let's expand it!!".

Some departments, with greater information needs, were especially pleased. Employees in one of Apple's Advanced Technology groups were elated to be able to access ERIC. The manager of this department aggressively promoted the service to his employees and they are now among our most active users. We keep in touch with them, making sure to communicate whenever the system is down. This has happened just once, when we received a defective ERIC disk. SilverPlatter promptly replaced the disk and we were up and running in a few days time.

Users had many excellent suggestions about the test. Every query was followed up with a phone call or e-mail message within 24 hours. This was to keep the momentum going and the interest in the project high. As a result of one user's feedback, we immediately expanded our networked CD-ROM offerings, adding a new volume of in-house Apple publications important to our programming community. We placed document delivery information on the server when the inevitable question arose, "How do I get the full text of the articles I found on *x* database?" We also received much valuable feedback on the *MacSPIRS* interface, which we passed on to SilverPlatter. We plan to incorporate as much user feedback as possible into the final design of our reference CD service.

Usage Statistics

We know of no network software that lets you tally the number of times a file server has been accessed, so we do not have actual usage statistics on the CD-ROM server. Our Network Administrator monitors usage simply by physically checking to see if the CD-ROM drives are in use. He reports that our ERIC disk is accessed several times a day, and OSH-ROM and MEDLINE are used occasionally. This anecdotal method of determining usage is inefficient and impractical. We would like to have a more quantitative measure of usage. We look forward to the day when accurate monitoring software for networks will be available.

Successes

The ease of installation of this CD-ROM network was truly incredible! No hardware or software compatibility problems, no controller cards, no flipping of dip switches, no autoexec.bat files. It was really plug and play. It took the library's Network Administrator about 1.5 hours to install the hardware and software, then connect the server to the Engineering net. It took another 3.5 hours to write tutorial and other miscellaneous documents. In about five hours time we were ready to roll out our test.

Search speed across the network has been excellent. A single term search on

ERIC took less than a second to produce results. A boolean search was approximately 1.17 seconds. This was using a Macintosh IIfx and an Ethernet connection. Search speed at your desktop depends on several factors: the speed of the file server, speed of searcher's computer, the kind of network connection used and the volume of network traffic. There were no problems with more than one user accessing the same CD-ROM simultaneously, and there seemed to be very little degradation in data transfer speed. On the average, it took 16-17 seconds to switch from one database to another. If you were searching ERIC and wished to change disks to MEDLINE, you were on the MEDLINE search screen within 16 seconds. We expected remote access to the CD-ROMs to be much slower, so this was a pleasant surprise.

Both hardware and software seemed stable and reliable. We experienced very little down time during this test. Server maintenance has been low, staff support lighter than expected and users seem very happy with remote access to bibliographic databases.

Problems/Challenges/Bugs

Each update disk from SilverPlatter has a different, cryptic disk name such as: ERDO, ORDO, MLAI. We have to revise our help documents each time we receive an updated disk and this is inconvenient. In addition, when users log on to the CD-ROM file server they see these disk names—ERDO, ORDO, etc. This is quite confusing and meaningless to them.

Troubleshooting technical problems is one of the challenges of offering a reference service over a network. When remote users call with access problems, it can be difficult to determine exactly the location of a problem. We had a defective disk in our drive, and users called to tell us they couldn't search the database. Had the user installed the software correctly? Was the problem affecting all the CD-ROMs or just one? Were the problems with our hardware or software? Or were they related to the network connections to our building, the user's building, etc.? There are more variables and less local control when troubleshooting problems with remote electronic services. It really helps to have technically astute staff who can solve such problems as they arise.

If the *MacSPIRS* application doesn't reside at the root folder level of the user's hard disk, the application doesn't work. In other words, if you take the *MacSPIRS* application and put it in another folder called "Programs," the application will not run. This bug caused problems for several of our users because the ability to place applications inside folders is a standard feature of the Mac interface. We gave this feedback to SilverPlatter during the beta test, but did not see this bug corrected in the released version of *MacSPIRS 2.0.* We hope it will be addressed in later versions of the software.

Summary

Generally, both users and staff members have been very satisfied with the performance of SilverPlatter's CD-ROMs on the Engineering network. We have had a minimal amount of down time, users have found the CD-ROMs easy to use, and staff support for the service has been less than expected. We plan to expand this test into a fully implemented reference service. This will involve extending the service to both of Apple's LANs (the Engineering net and the IS&T net), careful database selection, completion of multi-user licensing contracts and much more aggressive marketing of the

service. More of the Library's budget will need to be allocated toward the purchase of CD-ROMs with multi-user access. We believe that providing database searching of CD-ROM products across our networks gives our clients what they want—remote electronic access to the world's literature. We're committed to reaching this goal and each day we get closer to it.

* Special thanks to Kevin Broun, Information Specialist and Bill Reding, Information Technical Support Specialist of the Apple Library for all their work on the *MacSPIRS* beta test project.

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In Splendid Isolation:

Macintosh Computers at The University of the Arts Libraries

Macintosh computers are used throughout the Libraries at The University of the Arts, as yet without being networked together. However by using them, we have transformed and vastly improved our office and administrative work, general word processing, and the printed component of our teaching and reference activities. We also use Macs in a number of other ways, including online computer searching for use with multimedia products, and to control important segments of our collections, notably the slide collection. This report, rather than an in-depth look at any particular application, is a summary of work in progress.

Background

The University of the Arts, located in the cultural heart of Philadelphia, is a five-year old combination of two venerable century-old arts institutions: the Philadelphia College of Art and Design and the Philadelphia College of Performing Arts, the latter with Schools of Dance, Music, and Theater. The merger of these two institutions also brought into existence a unified library system which consists of the Albert M. Greenfield Library for materials and services in art, design, dance, drama, and the humanities, a Slide Library with resources useful to programs throughout the University, and a Music Library.

by Stephen Bloom

Macintosh computers are in prominent use in many arts fields, and at a university in which the arts are the major focus, Macintoshes abound. In such a setting, the choice of Macintoshes for many library applications has been natural. Although the Libraries of The University of the Arts have been using OCLC to catalog since 1982, when a grant materialized in 1989 to initiate local automation, the selection of six Macintosh SEs each with 20 Mb hard disks, together with ImageWriters and an Apple LaserWriter IINT was easily made. Upon their arrival these units were distributed to the offices of the Head of Technical Services, the Reference Librarian, the Director, the Periodicals Technician, the Slide Library, and the Music Library. Thus began our first taste of administrative computing and the adaptation of a host of other applications to various library operations.

We standardized from the beginning on certain applications (Microsoft's *Word* v. 4.0, *Excel* v. 2.2, and *Works* v. 2.0, Fox's *FoxBASE+/Mac* v. 2.01, and *HyperCard*) in the expectation of developing a local network within the Libraries. The local area network has been slow in developing, due in part to initial inexperience, time, telephone system constraints, and, above all, the constant individual use of the computers. Even in the absence of a networked environment, our Macintoshes have become indispensable many members in their work.

Reference

The University of the Arts' Reference Librarian began very early to use the Mac to produce attractive notices and signs, as well as a variety of bibliographies and finding aids. All of these materials are updated regularly, and their uniform format allows relatively easy production of new titles. Beyond these bibliographic templates, in a rapidly expanding library instruction program, special interest bibliographies are customized to specific course needs. These specifically designed products contribute significantly to our program of library instruction within the curriculum, and increase the length of time each instruction session influences students. In addition, this year the Library initiated online computer searching of RLIN as well as access to databases on EasyNet. This service has been made possible by a Macintosh in the Reference Librarian's office. As a search terminal, the Mac allows easy downloading, simple editing, and elegantly reformatted results with Microsoft *Word*

> *"Administrative uses of the Macintosh have become vital. As often happened with institutional consolidation and expanding academic programs, growth in the Libraries' budget and service activities have outpaced growth in staff."*

Administration

Administrative uses of the Macintosh have become vital. As often happens as a consequence of institutional consolidation and expanding academic programs, growth in the Libraries' budget and service activities have outpaced growth in staff. Statistics-gathering and

analysis, budget preparation, financial ledger and book order reconciliation, and student wage reports have been automated, usually with home-grown *Excel* applications. *Excel's* ease of use likewise has allowed the distribution of many of these activities to more appropriate staff. When monthly budget reports were initiated in order to consolidate and improve control of administrative and materials expenditures, the process was quickly learned by a senior library technician who had little previous computer experience. The process has appropriately given her a much larger measure of control over our accounting process and its need for constant liaison with the University's finance office. And her new facility with the computer encouraged her to propose and supervise the conversion to Microsoft *Word* of a manual subject authority file for our extensive picture file.

Student wage reporting illustrates the convenience and adaptability of our Macintoshes. The author used and admired for many years a student wage report developed lovingly and painstakingly at another university by a skilled computer programmer for a non-Macintosh system. Using that program as a model, *Excel* was employed to record data and produce reports on the use of hours and money for each student and supervisor. When student employees are hired, basic data is entered in a "Student Employment Summary," which is set up as a "dependent" *Excel* database. At the end of each pay period, student work is recorded and automatically computed in a linked "supporting" file, the "Student Pay Period Report." Cost to the Libraries, total hours worked, and the amount of time remaining on the student's allocation is computed and reported to the linked "Summary" report. Some of that information in turn can be produced as a report to supervisors so that they can pace student work to fit allocations and keep students informed about the progress of their work study grants.

Multimedia

The original purchase of computer equipment in 1989 included an introduction to *HyperCard* interactive multimedia packages, notably Voyager's "The National Gallery of Art Laserguide." Noting an emerging interest especially within the museum education field in exploiting the potential of this medium, the Libraries purchased a Sony videodisc player and a monitor to be used in conjunction with a Macintosh computer in the Slide Library. The Slide Library is heavily used by faculty preparing class presentations and by students carrying out viewing assignments, and so it was a logical place to intercept faculty who might consider assigning viewing or interactive lessons from the packaged program. It was also hoped that its availability might spur interest in developing custom interfaces to the videodisc using *HyperCard's* programming language, *HyperTalk*.

During the academic year 1989-90, general interest in and activities related to computer technologies grew substantially throughout the University, encouraged in part by the formation of a broadly representative University Technologies Committee. University-funded computer laboratories were built and equipped for use in art and design fields, as well as in music to expand opportunities for students and faculty in the use of MIDI technology. When University funds were offered competitively for new initiatives, the Libraries succeeded in gaining support for an expansion of interactive multimedia capabilities. Additional videodiscs were purchased, including titles relating to music and computer graphics. We also purchased our first interactive program for audio compact disc: Robert Winter's *"Beethoven's Ninth Symphony"* produced by the Voyager Company. It includes a commercial compact disc recording of the *Ninth Symphony* together with an interactive *HyperCard* program which searches and plays passages from the CD to illustrate thematic, musicological, and historical dialog and graphics on the computer screen. Additional titles have been acquired since. Also purchased, and a key

to the long-term success of our proposal, were *HyperCard* "toolkits" for audio CDs and videodiscs, which allow the creation of custom interactive *HyperCard* stacks for use with commercial audio CDs or compatible videodiscs, by adding timing instructions.

To accommodate this expansion, one new Mac SE with two CD drives was set up in the Music Library next to our other audio equipment. In the Greenfield Library another new SE with videodisc drive and TV monitor was set up in the public reading area. Also as part of the new initiative, similar hardware for both audio CD and videodisc was purchased for the University's Audiovisual Services so that the equipment could be distributed to classrooms and faculty offices for presentations and development. The *HyperCard* toolkits are loaded on the hard disks of each of the Libraries' and Administrative Services' multimedia stations. Audio CD and videodisc programs are kept in the reserve sections of the two libraries, and are circulated like other reserve materials for room use as well as overnight to encourage development of curricular applications.

Slide Library

Nowhere in the Libraries have Macintosh computers have been used to greater operational effect than in the Libraries' large slide collection. For a number of years we have been looking to provide some measure of automated control to the slide collection. We needed a relational database which would give us a unified and controlled artists' file as well as a record of individual titles, from which we could simplify the production of labels (one for each slide and drawer dividers for each artist and each specific image). A database of this sort would allow us to create directories and other custom lists, which would overcome the problems of a lack of a classification scheme for the slides and the physical arrangement of slides by artist and location. With more ambition than exact information on how we cared to construct this database, we eventually chose *FoxBASE+/Mac* v. 2.01, in part because of our belief that it offered the best potential as a link to *HyperCard* that might emerge from the Libraries' and University's interest in multimedia.

FoxBASE has taken a long time to learn, but we have begun to see impressive results in efficiency through the organization of a database, combined with increased staff involvement and interest in the entire actual process of putting together the database. We started with the conversion of the artist file, from which we produced a number of useful finding lists. Constructing a database also functioned as a learning exercise in *FoxBASE* for the staff. We now are converting and adding a file devoted to slide titles, from which we can produce multiple labels. Even with an ImageWriter II, by using standard abbreviations and proportional spacing, our labels now contain more information without suffering in readability. And the database is becoming an elaborate resource with information far beyond what appears on the actual slides. Although we have just begun the process of selecting an integrated computer system for general Library holdings, it is our intention eventually to have the Slide Library database as a useful element of that system-wide resource.

Conclusion

Over the past two years Macintosh computers have become invaluable to our operations. In addition to the variety of uses within the Libraries, each staff member who uses these computers has found the Macintosh to help facilitate relationships to other individuals and programs in the University. Faculty-produced *HyperCard* stacks are shared, users consult with Library staff on software applications and problems, and we, as a result, contribute to deliberations on the future of computing on campus as well as networking with other departments. Within the Library, we are now beginning to focus on putting together a local area network of the Macintoshes in conjunction with finalizing a

decision over an integrated system. As we plan for that integrated Library system, with its potential for remote use and access to graphic materials, we are visualizing links with our Macs and others throughout the University. But either within that integrated system or in a separate LAN, our challenge is continue to empower and experiment with as much success as we have achieved while they have been electronically isolated from each other.

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How I Got Here

In the summer of 1989, I was looking for library work, so I called likely organizations within a sixty mile radius of my new home near Hillsborough, North Carolina. GTE Government Systems in the Research Triangle Park called right back and offered me a short term project to identify their requirements for a technical library.

I accepted, and went through their materials identifying the type and scope. I wrote a tentative job description and outlined some ideas for future space layout, materials handling and computer needs. By the end of the six week period, I had finished this documentation and started a full-time job as Automation Coordinator for the Danville Public Library in Virginia.

Carol Bonham

A SHAREWARE SYSTEM SHARED

In April 1990, GTE called again and offered me a permanent position to implement my projected plan. I began work within weeks. I spent part of the first month emptying boxes, organizing furniture and getting phone and computer hookups. When I had finally dug out, I began to look at software packages available to build a library catalog and circulation system.

What I Looked at First

I knew that my automation choices for the Library would have to be 'Mac' based. Due to the Macintosh's graphic capability, it was GTE's system of choice. Up to this time, my experiences were only with IBM PC-based systems and so I had a lot to learn in a hurry. I took a couple of basic courses on the Macintosh and began to talk to software representatives.

I identified six vendors, and obtained demo products from them. The library applications were *Resource Librarian* from AccuWare Business Solutions, *MacBook II Plus* from Library Interface Systems Inc., *Biblio-Tech* from Platinum which was based in Paris; *MLS (Mac Library System)* from Caspr; *Mac the Librarian* from Richmond Software; and *CALM* (Computer Assisted Library Management) from Serenity Partners in Alabama. Most cost thousands of dollars and had a lot more power than I needed.

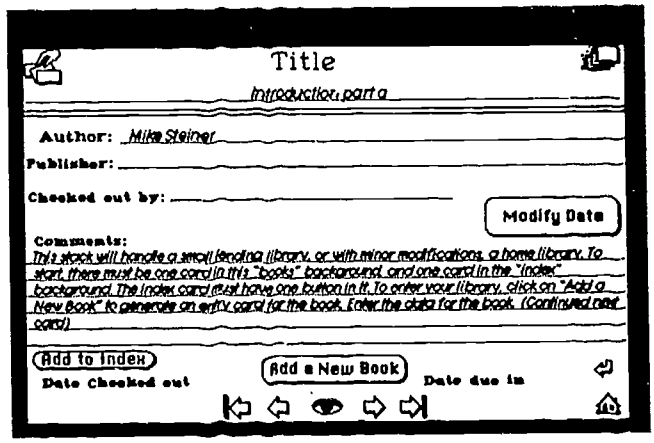

Fig. 1: The opening card of Mike Steiner's *Library Management HyperCard* stack gives the user basic fields for author, publisher, circulation, notes, and due dates.

As a point of reference, I serve 150 engineers in Software, Hardware, Systems and Training. The Library contains a collection of around 10,000 items, which needed to be processed and cataloged. I was looking for a program that would allow me to register my patrons, catalog the materials and connect the two with some kind of due date. After much research and discussion, one of the GTE engineers gave me a *HyperCard* shareware program called *Library Management* that he had downloaded from a bulletin board (Figure 1).

I tested for a week, sent the developer, Mike Steiner of Sierra Vista, Ariz., $50, and began to configure the stack for the Library.

Modifying *HyperCard* Shareware

The engineer, who originally located the stack, and I modified the package to meet some of my previously outlined basic requirements for the Library. I told him what fields I needed and he helped me to design the card. For instance, I dropped the 'Comments' field and moved the 'Checked out by' field to the bottom of the card. I also added 'Call Number,' 'Format,' 'Price,' 'Place,' 'Year' and 'Subject' fields (Figure 2).

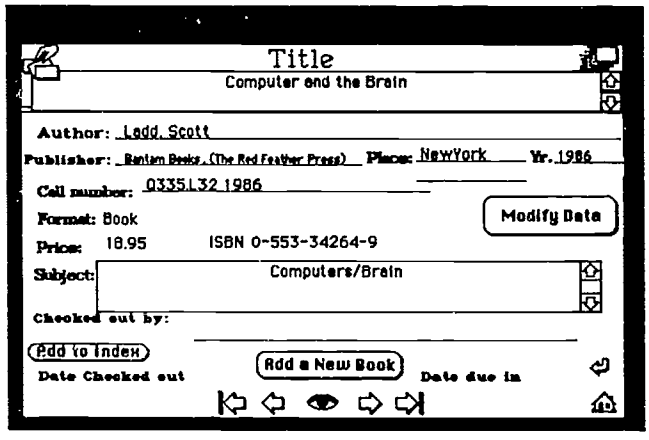

Fig. 2: Modifications to the *Library Management* stack included dropping the Comments field and adding to the stack fields for call number, format, price, place of publication, date of publication, and subject tracings.

Because the 'Title' and 'Subject' fields scroll up and down, I can put in as much information and as many subject headings as I need for each item. I click on the 'Add a new book' field to add material and I go to the menu to 'delete' a book. The 'Sort' icon in the upper left corner of the card alphabetizes titles for me and the 'show all' icon in the upper right corner quickly pages through the whole stack.

On the 'Index' card, when you click 'Find,' displayed as the small eye at the bottom, a screen opens for you to enter a term and then searches for it

Keywords link cards together and provide access by author, title, subject, ISBN, patron's name, phone number or any other data field element. I can even search part of a word with right and left hand truncation.

Cataloging

To check my cataloging against a standard and come up with subject headings and class numbers, I use a modem with the Mac to access the combined catalogs of Duke, NC State and University of NC at Chapel Hill. This access also allows me to borrow from them to fill ILL requests for engineering patrons, to provide materials not within the scope of my Library. When I do an online search, I usually split the costs across several departments, justifying the financial bottom line as well as increasing interdepartmental communication.

I am in the process of cataloging collections of materials stored in the offices of GTE's managers. This project will help me track down items in the facility and also verify that a given person is willing to

lend it. This gives me the luxury of not locating everything physically in the Library as long as I can maintain a sort of geographic inventory.

When a library item is checked out, I enter the employee's name and a unique-to-GTE four-digit phone extension in the 'Checked out by' field of this customized *HyperCard* stack. The program automatically computes a four-week due date and a 'Return the book' button appears.

Clicking on this button, when an item is returned, will clear the record, ready for the next patron checkout, or for the original patron to renew for another four weeks. If an item needs to be reserved, I add the second person to the 'Checked out by' field and contact them when the item returns.

Network Access to the Catalog

The Library catalog is available on GTE's VAX Server so over 80 Macs in the building have access to it through the AppleTalk network. The route for any patron on the Server is straightforward. They select "Public Folder' on the Chooser, get 'Carol Bonham' from the Library AppleTalk Zone, select 'NCSC Library' (North Carolina Systems Center), and then send it to their own listing. Of course, patrons on the network cannot modify information in the catalog, but always have 'read access' to it.

As I interact with my patrons, I better understand their information needs as engineers in various subject areas. For example, when one patron finished a project, I subject-coded every item she had used by the project name. I then printed card sheets in alphabetical title order for her records, using the LaserWriter printer on the network.

Disadvantages

Using shareware to operate a Library is not without problems. In the case of this particular *HyperCard* stack, there is a lack of statistics and circulation reports, which would be available in more sophisticated and expensive library-specific applications. There is no provision for reserves and overdues. With some modification, I corrected these deficiencies to issue overdue notices by simply printing the records as needed.

There is not a way to perform boolean searches, but, at this point, my database is small so that single-term searches have a high hit rate. I always search the bibliographic database before cataloging, so that I don't create duplicate records. A more powerful system would automatically check the database for me. As the catalog grows, sorts takes longer. I now allow one afternoon a week for this process and backup the entire stack onto to a single diskette at the same time, archiving it in another location.

Future Directions

The catalog will soon grow beyond the size of a single floppy, so that backups will require a tape drive or hard disk for storage. I am working on getting a more powerful computer, with a larger screen

and more memory. Modifications continue on the stack. Within the next six months, I will have the stack count each transaction for me, for statistical purposes. I don't ever expect to have sophisticated reporting capability, but then accounting for materials is more important to my administration than statistics.

This particular system is user-affectionate and easy to handle. There are familiar Mac icons, graphics, menus, and commands. Using a single screen is efficient for my operation, much more than the multiple screens of several developers and their library-specific software, which gave me more information than I ever needed about a book. Multiple screens for tracking different kinds of patrons, bar codes for circulation, or MARC are unnecessary, given the scale of this Library.

Of course, this shareware will probably only work well for a small library. But my research found that it is just the kind which is overlooked by software developers. They perhaps incorrectly assume that there are not enough of us to be worth the effort since the financial rewards by this market may be marginal.

My automation efforts have had the complete support of GTE's Operations Manager, which makes my job very satisfying. I intend to remain open to new software options, but for the present, given the performance of this *HyperCard* shareware, you sure can't beat the price.

After twelve years with the Fairfax County Public Library in Northern Virginia, **Carol Bonham** relocated to North Carolina in August 1988. She's had an IBM clone at home for the last six years, but since May 1989, has learned about the Macintosh at GTE. To quote Carol, "This means that I ride English saddle during the day and Western on the weekends and fall off the horse regularly." She edits GTE staff newsletter so she's polished her writing skills while learning the techniques of desktop publishing. She is also a journalist, producing a syndicated column entitled *"Common Scold."*

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Database Publishing on the Shores of the Chesapeake

by Kay Brodie & Claudia Jewell

Chesapeake College, a rural community college, serves residents of a five-county area on the Eastern shore of Maryland. It is the only public post-secondary institution in these counties, and recognizes its mission as a community resource. Nearly a decade ago, with funds from a Title III grant administered through the Learning Resource Center (LRC), the College published a *Directory of Community Services*, listing both public and private community social service agencies in the five-county region. Over the years,

frequent calls to the LRC lamented that this publication had not been continued or revised. Additional encouragement to revise the Directory can from an employee of the College, an ardent supporter and user of the LRC, and also the chairman of a group, coordinating literacy activities among many agencies on the Shore. She expressed her difficulty in finding a tool that listed agencies where she could send her clients for help with their personal problems.

The Administrator of the LRC decided that it was time to revise and publish an updated *Directory of Community Services*. The Media Technology Services Coordinator agreed to assist in this endeavor. The friend-of-the-Library and Literacy Coordinator, empowered with abundant enthusiasm, agreed to provide funds for clerical assistance for developing the database, that would be the foundation of the *Directory*. She also promised to locate funds for printing and distribution.

Selection of Project Software

One of the first steps of the project was to find software that would serve dual purposes, to create a databasc and subsequently format output so that it could be published as the *Directory*. Because other directories exist for other areas of the state, often published by public libraries, the Media Technology Services Coordinator began to contact parties responsible for these projects. Indeed it appeared that there was excellent software available for this project, but most of it was well beyond our means.

We then considered some of the more well-known, non-Macintosh database programs. At this point, we were hoping to cooperate with public libraries in the area and create a database for everyone to use and share. But we were the only Macintosh-based agency in the group. The enormity of our task seemed more evident with each passing phone call. The Media Coordinator, being a Macintosh-oriented computer genie, began to be discouraged. With the clerical help starting soon, the Administrator was getting nervous. So we said...

Hey, let's go with what we know! No big deal creating a Mac database! And we'll just turn the database into a word processing document... HA!

We discovered that indeed it was no big deal to create the database using *Works*. Our clerical help, a student clerk, caught on immediately, even though she had never used a Mac before. It was easy to create mailing labels to ship proof sheets to a variety of agencies for corrections.

The difficult part in this project was turning the *Works* database into a document that could be printed as a directory. Part of the difficulty was born in the variable lengths of the field devoted to the description of services by agencies, a description which could be very long. We devised several fields in the database to input these descriptions, and getting these fields to wrap was the most tedious of our problems.

The Media Coordinator spent many hours working with the document and talking over possible solutions with all sorts of computer "experts." In the end, we transported the *Works* database into *Word 4.0* as enriched text to create a word processing document. The editing was then done in this

form. Was it a perfect solution? No. Did it work? Of course, and the result was professional and easy to read.

Compiling the Database

The Administrator, in addition to hand wringing, was responsible for compiling and verifying data for the clerk to enter into the database that eventually the Media Coordinator could print. Area public libraries assisted with data compilation by making their information and referral files available to us. From these files, the Administrator would locate appropriate agencies, edit the entries, and the clerk could subsequently enter the information into *Works*.

The initial compilation from these public library sources went smoothly. Each library file contained both unique records and duplicates of entries of other libraries. To these files, we added records from our older directories. We also scanned local newspapers each day for months for word of new agencies, phone numbers, and contact persons. For the most part, duplicates were weeded by using simple functions in the database.

In order to verify the data, records were submitted to various agencies for updates and corrections. We enclosed a self-addressed stamped envelope for replies, and the response was excellent. After records were mailed to agencies, the Media Coordinator dumped the database into a word processing document. The clerk continued to add new agencies to a new data file. Printouts for verification were later sent to agencies from this data file and then these parallel files were merged. As corrections and updates were received, the clerk fixed address and contact information in the database. The Administrator corrected descriptive data in the word processing file.

Nitty-Gritty: Cleaning the Database for Publication

After five months of data collection, entry, and verification, the clerk graduated, other library employees went off on vacation, and the Media Coordinator and Administrator faced a long summer. Because the agencies change frequently, additions and corrections never seemed to end. A cut-off date of July 1 was set after which we would not enter additional agencies into the database.

The Administrator spent the month of July editing—standardizing agency names, removing organizations deemed inappropriate, and checking entries. If we had not received a response from an agency, a summer clerk—normally occupied with circulation in the LRC—phoned the organization for verification. Only a few phone verifications were needed. After the edited text was printed, style and format changes were made, and spelling errors were corrected. A subject index, table of contents, and ready reference sections were added. Since the *Directory* was arranged in alphabetical order by name of the agency, other indexes were not created.

Final Product Released

In early August, the Media Coordinator completed a cover design, made some final design changes, and printed the *Directory of Upper Shore Communi-*

ty Services. The publication was printed at the College Print Center with a plastic cover and spiral binding. The Literacy Coordinator kept her promises of support—both financial and moral!

The resulting *Directory* was well received by community agencies, schools, and on campus. An updated edition will be printed again next summer (I can't believe I wrote that!). At some point, we may merge our operation with that of the Eastern Shore Regional Library, which has a grant to compile a computer database of all these organizations and agencies! In any case, the positive response from the community made the project worthwhile.

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BUSINESS SENSE

Using the Macintosh in a Business School Library

The Aarhus School of Business is one of the major business colleges in Denmark. It has approximately 5000 students from Denmark and a number of exchange students, mostly from Europe and the United States. The school has two faculties, the Economics Faculty and the Faculty of Modern Languages. The Language Faculty teaches four foreign languages: English, German, French, and Spanish. The Library at the Business School functions as a shared service to both the Economics and Modern Languages faculties.

by Lene Byskov & Jørgen Albretsen

The Macintosh has been in use at both faculties for about five years. It first appeared in the Faculty of Modern Languages where it was introduced in 1986 by Mr. Henrik Holmboe, senior lecturer and head of the Department of Computational Linguistics.

The concept of a Library information system originated as a solution to two problems known to the Library administration. There definitely was a need to introduce patrons to Library facilities that were not well known. There also was a desire to free personnel from answering general, time-consuming reference inquiries that could be answered by a public information program, set up on workstations in the Library. This information system would include information normally distributed through pamphlets as well as through reference questions. Furthermore, this program would provide navigational details on the location of materials in the various sections of the Library.

In the beginning, the two librarians responsible for their part of the project, Birgitte Sønderkær and Ellen Nielsen, had very little idea about the possibilities of *HyperCard*. We produced an introductory stack which stimulated the imagination of our co-workers with the possibilities of *HyperCard* in the Library.

Development of the Library information system

Even in the hands of inexperienced developers, *HyperCard* is a powerful application. In our example, we started with a general outline of the contents. With this blueprint, we invented a layout for the entire stack. From that point on, development was limited only by our imagination and our rapidly increasing skills in manipulating *HyperCard*.

The Library information system, based on *HyperCard*, consists of five stacks. Each stack contains from three to 44 cards. Let's examine each of the components, which includes introductory, informational, navigational, and graphics stacks.

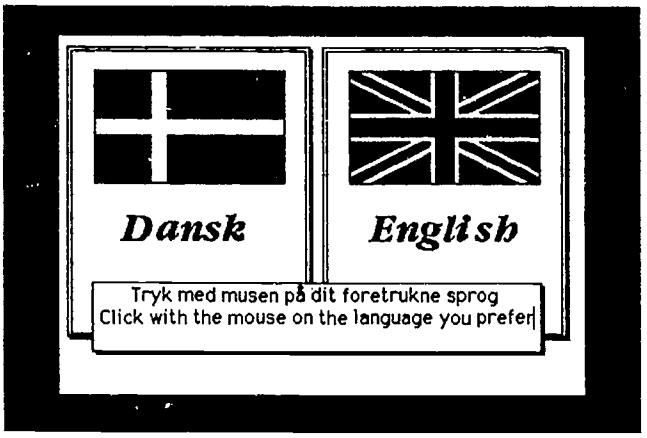

Fig. 1: The introductory stack of the Aarhus School of Business Library provides a language option through the guide. This system can also be adjusted for other languages in the School, including French, German, or Spanish.

The introductory stack ("bib visual") consists of a flashing Aarhus School of Business logo, designed to attract the attention of visitors to the Library. Obviously we could not use sound to advertise the stack to patrons, so we chose an original/inverted logo representation. This stack also contains a language option of either Danish or English. With this option built into the stack, it is possible to extend the system, by adjustment of just one card, with other languages taught in the Aarhus School of Business such as German, Spanish or French (Figure 1).

This introductory stack is the Home stack for the Library information system when it is not in actual use. The following *HyperTalk* message handler is in the information stack script to return the program to its Home stack, "bib visual."

```
on idle
 global oldTime
  put (the ticks - oldTime) into¬
  howLong
  -- put (the ticks - oldTime) into the¬
  message box
  if howlong > 36000/2 then go stack¬
  "bib visual"
  pass idle
end idle
```

The variable `oldTime` is updated with the "ticks" from other message handlers in the stack such as the interaction of the user clicks with the mouse, thus ensuring no premature return to the introductory stack. If no one has used the stack in a period of five minutes, this script returns the stack to its starting point, "bib visual."

There are two information stacks within the Library information system, which are identical but not interdependent, and can be edited or changed freely. Contrary to other stacks, they both contain text rather than language-independent symbols. All cards in the two stacks have buttons that enable the user to jump to any of the two last stacks, "location" and "photographs." (Figure 2)

The location stack is a navigational tool, showing a patron the location of facilities within the Library, such as the Language Library, or options for assistance, for example with the catalogues. This stack consists of thirteen cards that are all drawings scanned with an Apple Scanner and *HyperScan*. The drawings are identical to those found in pamphlets distributed to users in the Library, so that patrons do not have to become familiar with two sets of drawings. As shown in Figure 1, it is only possible to go from any of the information stacks to the location stack. Forcing a patron to work through the stack card by card would only confuse the user rather than inform. Buttons on the location cards help the user move through the stack in a routine fashion. A stack command is built in to eliminate any danger of a patron backing into an irreversible corner in the information system.

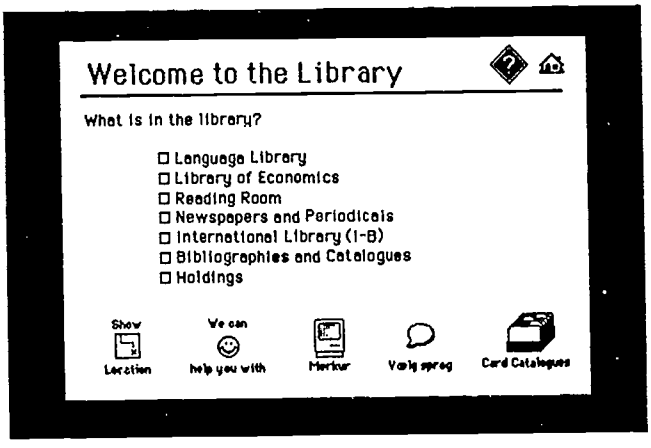

Fig. 2: The Main card in the Aarhus School of Business Library information stack provides a navigational tool to facilities, access to brief description of Library personnel along with scanned images, and options for help with the card catalogue.

The photographs stack contains scanned photos of all the employees in the Library. It was discovered that most patrons of the Library only knew the employees as faces but that they were unable to attach names or functions to personnel. To resolve this problem,

photos were integrated at all relevant assistance stages. Each card in the stack shows the photo of one employee, with a total of 32 cards in all.

Like the location stack, the photographs were scanned using *HyperScan.* This stack can be entered only through the information stacks, providing a patron only a brief description of an employee along with a scanned image and then a quick return back to the information stack. This autonomy of the stack facilitates the entering of new employees into the Library information system as well as updating of old scanned images.

Overall, stacks are linked in a simple fashion. The introductory stack is the point of origin for the Library information system, taking the user to a series of either English or Danish informational stacks. Both of these information sequences are linked to locational and graphics stacks, with navigational guides and scanned images of Library personnel. (Figure 3)

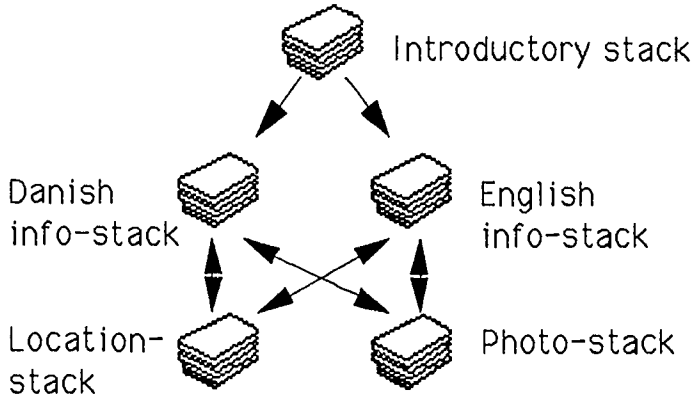

Fig. 3: Stacks are linked together in Aarhus Library information system using the introductory stack as a the point of origin. Patrons can then follow an option of using either English or Danish to answer their questions, following imbedded navigational guides and scanned images.

Pros and cons of the system

The benefits of this Library information system are immediately obvious even for those patrons who just "play" with the stacks, who gain more information about the Library through their interaction with *HyperCard* than through more traditional means of pamphlets and reference. One primary effect of this activity with the stacks is that librarians are finding users more goal-oriented. Thanks to the informational stacks and the scanned images, patrons know whom to contact with problems. Users first use the stacks to find information on the Library. If they can't find their answer in the *HyperCard* stacks, they then contact a librarian for assistance, which ultimately means a saving of precious time for both patrons and librarians. Finally, this computerized introduction to the Library provides users with a good introduction to online search and retrieval routines, an experience which will be invaluable given the increasing role in libraries of computerized information retrieval schemes.

The major drawback to this approach is that there are never sufficient computers available to allow all users to familiarize themselves totally with the system. Another potential objection to this approach is that it is dehumanizing by removing human interaction in part from reference. In this particular case, the combination of computers and librarians enhances library service by removing some of the tedium of reference, reducing the embarrassment of patrons with basic

and routine questions, and providing a path for users to staff for personal assistance with complex or difficult inquiries.

Future developments

With the current configuration of *HyperCard* and Macintoshes in the Aarhus School of Business Library, it will be possible to link the Library information system to the online database "Merkur" With this link, it will be possible to create screen dumps which could be used as book slips. This option would greatly increase the accuracy of these slips and again save time for the librarians in verifying bibliographic information. The only limitations for expanding this information system in the near future appear to be our imagination in devising new scripts and stacks, and sufficient workstations for all of the patrons.

Jørgen Albretsen (shown left) is Computer Scientist at the Department of Computational Linguistics, Aarhus School of Business, Denmark. He is Project Supervisor on all *HyperCard* projects performed in the Department, and is generally responsible for the computers at the Faculty.

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Macintoshing the Special Library: A Case Study

During the early years of Kalmbach Publishing Co.'s history, a railroad reference library accumulated on desks and shelves in the offices of the editors of MODEL RAILROADER and TRAINS. In the late 1950s, a large closet was designated the Library and some of the books were moved there. It was cataloged, but with no way to connect the cards to the books—there were no call numbers on the books. The books themselves were grouped in five loose categories: books on locomotives, books on electric railways, soft-cover books, "popular" books on railroading, and other books on railroading. (The difference between the "popular" books and the others seemed to be a matter of photographs versus footnotes.)

In 1973, the editor of TRAINS gave the Library a formal existence and hired a librarian, whose principal contribution was to put groups of soft-cover books between hard covers, usually without any consideration about subject matter.

In early 1975, after two years of editing books, I was put in charge of the Library, inheriting much larger, air-conditioned quarters. My mandate was to make things better but keep them so we could still find things. A better classification system was necessary. Since the whole room would be 385 if I chose Dewey Decimal, I devised a mnemonic alphabetic code and hired a part-timer to make a new card catalog.

How the Library is used

Because the classification is mnemonic, most staff members walk in, go right to a shelf, find what they want, take a

George H. Drury

few notes, and leave. A few ask for help—for example, where are all the books on the Boston & Maine Railroad? I ask "What are you really looking for?" If it's whether the Boston & Maine used hyphens in its locomotive classification (is this a P4a or a P-4-a?), the answer can be found more quickly elsewhere: photos, maps, files. The card catalog is the resource of last resort. It was, even when it was up to date.

Circulation is on the honor system. Users need not sign out items going no farther than the copy machine. If a book is to disappear temporarily from the collection, the borrower must take a large, bright-colored card from a tray; write the date, call number, title, author, and borrower name on a card, and put it in another tray. I enter the information in a Microsoft *Works* file and put the card on the shelf in place of the book to serve as a pointer for the next person wanting the same item. Sometimes honor is in short supply, or the borrower says over his shoulder, "I'll bring this back before anyone misses it." The system can be also short-circuited when users return items directly to the shelves. I've never had full compliance with either "You took it, you put it back" or "Let me reshelve it." Items out more than a month are tracked down by the Books Department secretary.

Cataloging procedures

In simpler times, as new books came into the Library I reeled cards into the typewriter, typed the information, and filed the cards. Eventually an IBM Selectric replaced the Royal manual, but it didn't do as well with cards as its predecessor.

About 1980 the company installed an Atex system for text editing and composition. In a few years a terminal was placed in the Library. It was thought that users would send the results of their research back to their desks electronically, and it was a good place for a spare terminal. I was already proficient on Atex, and after a little experimentation I devised a skeleton form that I could use to produce catalog cards on the line printer, 3 cards (really, slips of paper) per 11-by-15-inch page, with lots of good scratch paper in the bargain. I still had to file those slips of paper.

The company acquired an Apple IIe with an eye toward the growing interest in computers in model railroading. The Apple gravitated to the Books Department, and the Books Editor struck a bargain with my boss: secretarial assistance to produce catalog cards in exchange for some of my time for editing and writing. Monthly I ran off a list of new books on the Atex line printer. The Books Department secretary put the continuous-form cards in the Apple printer, booted up a software package (I've forgotten which one), and produced a string of catalog cards, which she filed later.

"Later" gradually became "much later," and "monthly" became "occasionally." When the stack of cards awaiting filing reached my

squalor threshold, I filed them, noting that the drawers of the card catalog cabinet were nearly full.

Courses converge

In the late 1980s Kalmbach acquired a group of small-circulation magazines for dollhouse enthusiasts. The new division was placed under the company's Books Editor. Recognizing the technical and physical limitations of the Atex system, he bought a Macintosh to investigate the feasibility of publishing three magazines with them. The new division was quickly equipped with Macintoshes.

Through a couple of vacation trips, one of which yielded an article for TRAINS Magazine, I acquired a reputation as an expert on rail travel in Switzerland. After answering numerous letters and phone calls asking for information, I asked myself, "Why give it away? Maybe I can sell it." I wrote the first edition of *The Railfan Guide to Switzerland* on my Apple IIc at home, put a new ribbon in my dot-matrix printer, and pulled off copies, which I took to a local quick-print place. When an order for 100 copies came in from a travel-book distributor, the Books Editor said, "Come to the Miniatures Division offices after hours and typeset it on a Macintosh. You'll get a better-looking product, and you'll learn a skill the company can use." He converted my files to Microsoft *Word* and gave me a few minutes of instruction, essentially saying, "The way to learn this is to pull down menus till you find what you want." Within a month, I was the company's *Word* expert. Later I learned how to use Quark *XPress* while producing *The Railfan Guide to Austria.*

The Library was placed under the Books Editor's supervision in 1987, and he put me in charge of data transmission and conversion company-wide. You won't find those in the library on most organization charts. They are a facet of what we call Bob's Service Bureau, doing jobs that must be done and that no one else will do. Authors were submitting disks along with their manuscripts, and considerable secretarial time could be saved by bringing in the files electronically. I took home a modem so my Apple could communicate with Atex; another modem connected one of the Macs in the Miniatures office to Atex. We bought and I learned how to use an optical character recognition scanner. The Books Editor began specifying Macintosh for my editorial projects. Macintoshes began to spread to other departments, but not to the Library.

A Macintosh for the Library

I spent more time out of the Library than in it, posting a long list of places where patrons might track me down, depending on the Macintosh task at hand. It was obvious there should be a Mac in the Library, but it took the promise of a computerized catalog to actually materialize a Macintosh there.

Soon after the Macintosh arrived, I discovered that the Atex files with the cataloging information still existed. More as an experiment than anything else, I brought the records into Microsoft *Word* via

Microsoft *Works'* telecommunication program, cleaned them up, inserted tab commands between fields, and created a Microsoft *Works* database. You might ask, why to *Word*, then back to *Works*? At the time I was unfamiliar with *Works'* word processor. In any case, suddenly I had a catalog, more or less, of four years' worth of acquisitions.

A database isn't a catalog. I investigated several library catalog and library management packages. They generally included features we didn't need, such as bar codes, overdue notices, and circulation statistics, and they all replicated the traditional, official library catalog card format on the screen—a format I've never found necessary or fully understood. Most software packages boast of the abiiity to produce catalog cards, the very basic tradition that I was trying to rid in my operation. I noted that none of the systems would put the cards in the catalog drawers for me.

However, one package looked promising, *On-Line MacCatalog* from Right On Programs. A demonstration disk wasn't available, but

"The question becomes whether a data base can serve as a user-accessible catalog. Is it more difficult for a user to search a data base than to work with genuine library catalog software? I think not, given that many of the staff have had some exposure to the Macintosh, and the others soon will."

given the price of the application, we simply bought it. I installed *On-Line MacCatalog* and quickly discovered its shortcomings. Briefly, there was no way to double-check entries before they went into the system. It was not possible to access partial records that went in because I hit Return instead of Tab. A shelf list could not be produced on demand, only shelf list cards, and that only once per item. Finally, searching was only possible by exact title, author, and subject or some truncation of them.

I analyzed the needs of the Library more carefully. We need a complete and current list of our holdings, if for nothing else than appraisal and replacement. I thought about the searches that I had made of my database, to which I had been adding acquisitions monthly—a list of book titles containing the words "spirit" or "scene" (one of our authors was titling his new book); a list of books about diesel locomotives published in the past three years (for a staff member who wanted to compare them with his proposal for such a book); and a list of all the books from a certain publisher (to compare that line of books with ours). Searches for publisher and date aren't part of most packages, but they didn't appear to be a problem for a database.

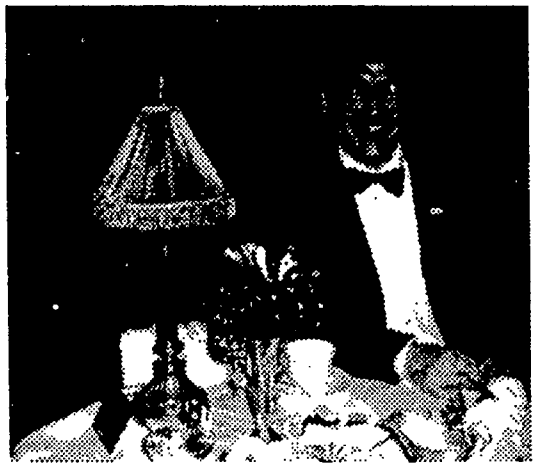
The question became whether a database can serve as a user-accessible catalog. Is it more difficult for a user to search a database than to work with genuine library catalog software? I think not, given that many of the staff have had some exposure to the Macintosh, and the others soon will. Those who are Macintosh virgins will have to be shown how to point and click. A written procedure will help, too. Generally a solo database search will be necessary only when I'm away from the Library for some length of time. Most of the information requests to the Library are immediate, but not hopping-up-and-down immediate.

We have decided to stick with the Library database for now. When (or if) the ultimate catalog package becomes available, part of its ultimateness will be the ability to convert database files, if not directly, at least through some conversion software rather than through fingertips.

How else is the Library Macintosh used?

A serious deficiency of the Atex system was its lack of documentation. The walls next to Atex terminals were soon covered with pieces of paper with hints and tips. Microsoft *Word* and *Works* and Quark *XPress* are much better documented, but the habit of asking others how they solved problems is well established. Rather than tell people one by one, I produced something called *Subtleties of Macintosh Typesetting*, with information on left and right quotes, real dashes instead of double hyphens, constructing fractions and the like. My early experience on the Macintosh has made me a resource person, the one to ask about tab stops and style sheets and multiple column format, that is, how to specify two columns and not produce a document that is one character wide. Similarly, I have written down the procedure for optical character recognition scanning so the job could be done by our Production Department, rather than by me.

I still have the job of moving files between Atex, Apple, and Mac. As we convert our operations to Macintosh, I will have to do less of this, but I will be in demand as an instructor. The Macintosh in the Library—an SE with a 80 Mb UltraDrive internal hard disk, two floppy disk drives, Apple modem, and Radius monitor with a 12-by-15-inch screen—sees considerable use for teaching and demonstrating. All of these multiple roles mean that the Library's position as an informational resource both for printed matter and technologic expertise is solid and growing and should continue to flourish well into the future.



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Carol Felch

The "Macintoshed Life" ... in a Junior High School Setting

The delightful and exhilarating experience of having a Mac SE computer in our junior high school library in Lancaster, Texas actually happened to me one bright winter morning in 1988. Due to the positive outcome of our bond election results in Lancaster, and the vision of our school administration and local school board, I, along, with many public school staff members in this community, were able to have Macintosh computers in our classrooms and Library. The Macintosh provided me with the great advantage to implement in part

some of the ideas outlined in a document issued jointly by the American Association of School Librarians and Association for Educational Communications and Technology entitled Information *Power*[1]. Finally, and most importantly, the Mac changed our school Library environment into an *information rich* one, allowing us to integrate a teaching/learning team concept with our staff of teachers, learners, and administrators.

Taking the challenge

The next challenge for me after the arrival of the Mac was to learn how I could use this versatile tool for the completion of both routine, and creative tasks. I quickly discovered that the Mac is a computing tool which allows me to manage, arrange, and assist with a wide range of information, storage, and retrieval problems. Since junior high school librarians are usually library/media generalists, the need for this sort of flexibility is crucial.

Within the Library, we primarily use Microsoft *Works*, Microsoft *Word*, *HyperCard*, Brøderbund's *Print Shop*. In addition, we are fortunate to have an interactive video disc programs, *Election 88*, by ABC News.

How is this software used? As I am writing this, a parent wandered into the Library hunting for a suitable graphic representation of a computer, without a human sitting in front of it. She came to the Library expecting to retrieve an image simply copied from a magazine. Instead, she departed with a picture of just exactly what she had in mind, copied from the *Print Shop*. Normally, what might have taken from ten to fifteen minutes of effort—negotiating with the patron about the exact picture, tracking down just the correct magazine article and picture, and copying the picture (provided that the magazine was in, and the copier was not being used)—was cut to five minutes.

As another example, *HyperCard* is used to print calendar pages those same datebook components embedded in every copy of the program. Creating a calendar is a task which, for many school librarians, can occupy a considerable amount of time just before the beginning of the school year. Before actually printing the pages, I make the necessary school holiday, in-service and early dismissal date notations. In that way, the Library can ensure that the school calendar is coordinated with classroom schedules right from the beginning of the school year by teachers. This product also reduces the burden of paper in the hands of teachers. Most importantly, a task that once took two or more hours to complete is reduced to a much more manageable size, enabling me to concentrate on other more Library-specific tasks.

My Mac keyboard hums productively as we "crunch" out bibliographies, done in MS *Word* or MS *Works*. I have been able to use the database component of *Works* to store about video cassettes and videodiscs in the collection.

"Home" database

HyperCard is the "home" database for periodical holdings, subject headings for the vertical file, and a quick reference file. The quick reference and subject heading stacks of the vertical

file are done with *HyperCard's* built-in Address stack, taking advantage of the Find feature. This feature truncates on as few as five characters, and helps students start a productive search of the vertical and periodical files.

Sustaining accurate records of circulation by instructors is much easier in our Macintoshed Library. I use the word processing component of MS *Works* primarily, because of the descriptive ease with which I can accurately record AV materials. In the environment of this school Library, everything circulates. We check out stencils, power strips, remote controls, AC adapters, phone plugs, ohm-measured cable for VCR/TV viewing and listening, as well as cassettes which are needed "now" and can't wait for cataloging and barcoding. Many of these small pieces of equipment, so necessary for the normal functions of classrooms, are not barcoded. As the school and school district move more quickly into the next century, the routines of school libraries will reflect the demands of a fast-paced, information-hungry, and technology-based learning environment. It will become increasingly necessary to circulate more teaching and audio-visual materials to teachers literally "on the run." As this process accelerates, it is vital to have a computing tool to maintain this pace, by providing an accurate record of all items. Statistically speaking, we now replace fewer of these increasingly smaller electronic items every year, thanks to the greater accuracy of our records.

Election 88 is a rich source of information from the 1988 U.S. Presidential campaign, pulling together text, video from broadcasts, and the narration of Peter Jennings. It literally brings the Presidential race into the classroom for our students. For those preparing projects on the election, the text in *Election 88* provides information not only on the major candidates but the "also rans," a group that may have been a more problematic research group for both students and instructors in the absence of this product. This laser disc and *HyperCard*-based product is indispensable.

As any Macintosh user can attest, I am still finding many tasks that can be completed with this versatile computer. There are probably faster ways to complete some of my routines, with fewer keystrokes. There are more powerful applications, that would remove some of the tedium of my tasks in the Library and with the Macintosh. But, that's OK, because I, like all the teachers and staff in our school, are students of technology in this decade. We will learn to be even more productive, bringing to our students an increasing amount of information and tools, that will be even more useful and relevant than now.

Reference

1. American Association of School Librarians. *Information power: guidelines for school library media programs.* Chicago : American Library Association; Washington, D.C., Association for Educational Communications and Technology, 1988, 171p.

Carol Felch has been a school librarian for eighteen years. She began her professional career in Ohio, and for the last fifteen years has served in the state of Texas. She has a twenty year old daughter, and an eleven year old son. She currently resides in Lancaster, Texas and recently has had the professional opportunity of being part of the planning team for the new Lancaster junior high school, which was dedicated a year ago. Mrs. Felch serves as this school's librarian.

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Using HyperCard as a Promotional Tool

"The medium is the message" — Marshall Herbert McLuhan

HyperCard stacks are well known for their educational uses, informing a wide range of audiences on subjects as diverse as trilobites and human anatomy. Stacks have also introduced library patrons to facilities and collections, in academic, public, special and school

Barbara Mattscheck

libraries literally around the world. But *HyperCard* can also serve as a marketing tool. It can demonstrate a technology and promote a product or agency represented in the stack. Corporations to some extent have used stacks to bring information about products to potential customers, and some government agencies, such as the British Columbia Ministry of Tourism, have discovered the advantages of *HyperCard* as an advertising vehicle. But libraries, and their professional organizations, have not fully exploited *HyperCard's* potential as a marketing and promotional vehicle.

In May, 1990, the Philadelphia Chapter of the Special Libraries Association (SLA) recognized the need to educate participants in the Governor of Pennsylvania's Conference on Library & Information Services about special libraries. A list of issues, relevant to special libraries for discussion at the Conference was prepared by the Chapter. Six major areas (networking, literacy, funding, informing government officials, federal issues, and marketing) were briefly described and recommendations for action were made. We planned to mail this issues sheet, which also defined and explained special libraries in Pennsylvania, to the delegates in preparation for the September conference.

Then, while attending SLA's annual Conference in Pittsburgh, I happened to stop by the Apple booth. Ed Valauskas was demonstrating some stacks including an early version of the White House Conference stack. The light bulb went on in my head. Why not do a stack of our special library issues for the Governor's Conference? Not only could we educate the delegates about special libraries but we could show them a technology they had probably never seen before. Also, those who would be going to Washington for the Conference would be a little

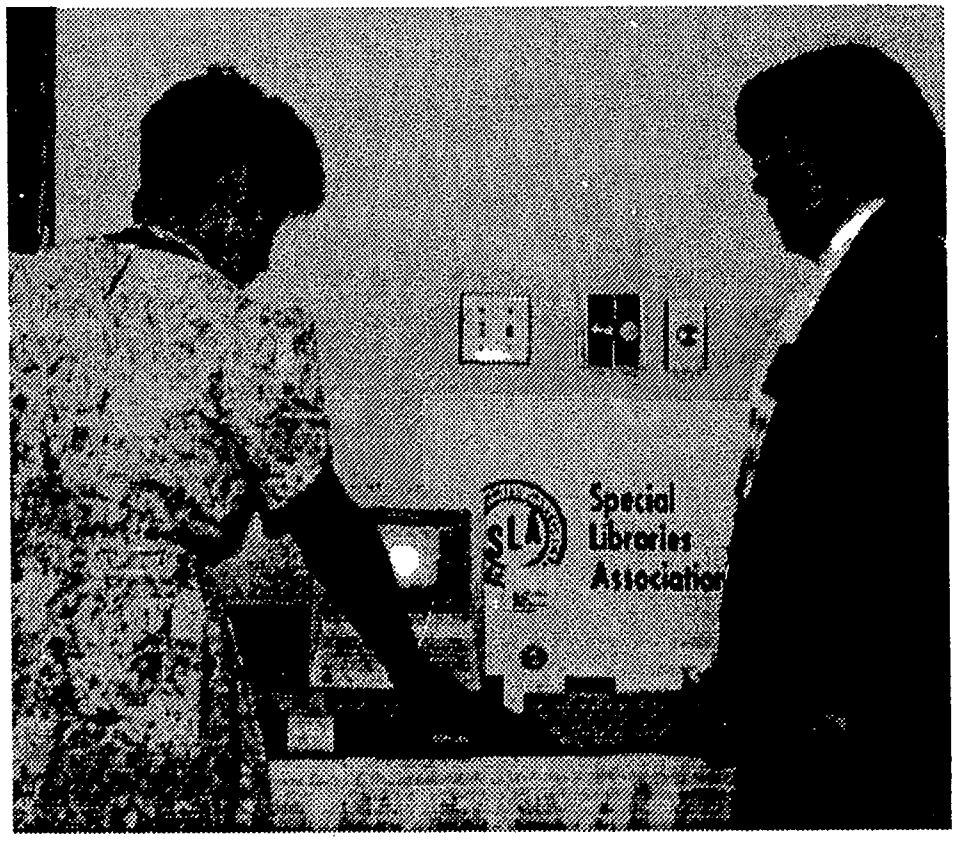


Fig. 1: The exhibit at the Governor of Pennsylvania's Conference on Library & Information Services brought to the delegates information about special libraries in the state, increasing their awareness of issues of importance to special librarians that were part of the Conference's agenda.

more prepared to use the White House stack.

After conferring with several Chapter board members, we decided to go ahead with the project and Ed arranged for Bill Vaccaro to transform our ideas into a *HyperCard* stack.

Why have someone in Chicago develop a stack for us? Because I, like 99.9% of our Chapter, am a DOS person. I use a Macintosh SE to produce our Chapter newsletter so *Word* and *PageMaker* are

Card took place and our stack was ready. The Chapter's Board acted as a trial audience for demonstrating the stack. Their problems with the technology helped prepare me for the Governor's Conference.

At the Governor's Conference

Time and space were very constrained at the Conference. The exhibit area was

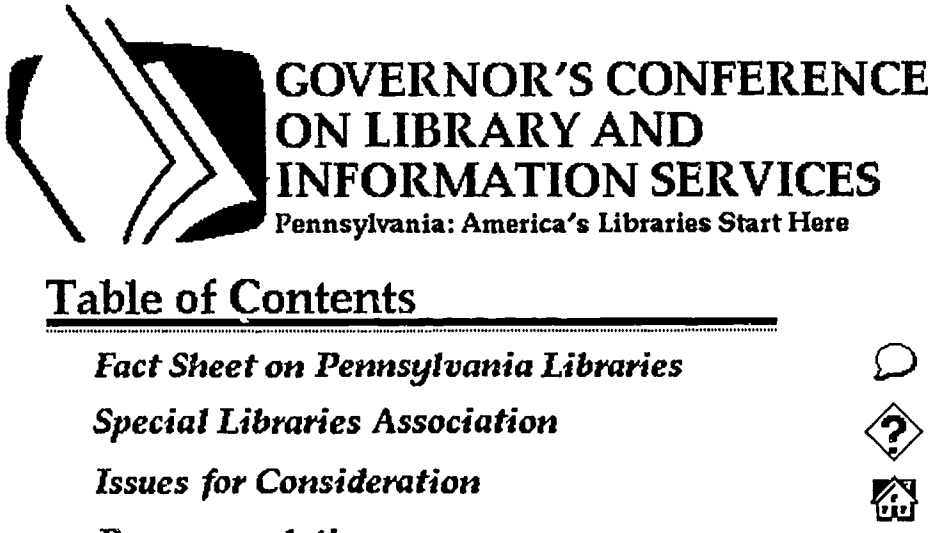


Fig. 2: The Table of Contents from the SLA Philadelphia Chapter stack provided an overview of issues and gave the delegates a navigational tool to find specific information on topics under discussion at the Conference.

my Apple strong points. At that time, I had used *HyperCard* to compile a database but I knew that it was beyond my scope to create this stack for my Chapter.

So, for the rest of June, we polished our writing, worked out the flow of the stack in a primitive *HyperCard* stack, collected photographs of special librarians and their users, found appropriate logo art and graphics, and panicked that it wouldn't be ready in time for Bill to develop the stack.

Eventually, we collected all of the information, sent it to Bill. The transformation from paper and script to *Hyper-*

not open during the meetings and we could not draw people away from other activities. However, given our narrow window of opportunities to reach our audience, we were able to demonstrate the stack, and Apple technology in general, to everyone who was interested. (Figure 1)

Our strategy involved several steps. We had a print copy of our issues, and a description of special libraries, to give to everyone who stopped by our station. (Figure 2)

I made sure the delegates got this information right away so that they didn't

feel they had to remember everything. As I demonstrated the stack, I emphasized certain key issues and pointed out (i.e. confirmed) that they were on the sheet, to provide reinforcement and to allow for the fact that the delegates didn't have a great deal of time to read through everything. (Figure 3)

My approach to the delegates varied for each one. I was able to refine my pitch so that I could attract people to just look at the stack. Even those delegates who stood far away from the table, afraid to get near the computer, were drawn by the photographs and animation. We included in the stack a scanned photo of Pennsylvania's Commissioner of Libraries, Sara Parker, which proved to be one of the most popular cards. Everyone knew the Commissioner it seemed and could identify with her image in the stack. (Figure 4)

The stack served two educational purposes. It informed delegates about SLA and Chapter concerns and it demonstrated a technology. We told those viewing the stack how *HyperCard* could be used in their own setting. For most, it was the first time they had seen an Apple Macintosh, so I spent part of the time showing how you could move around in a stack and the intuitive nature of the interface.

The delegates were captivated by the technology. They appreciated the concept that the program could focus on their interests, rather than try to channel them into subject areas or issues that they were not concerned with at that particular point. Delegates remembered that SLA that provided them with this experience. During the issue discussions in the course of the Conference, when special libraries were mentioned, they knew something about them. They remembered, if anything else, the scanned photos in the stack and our "moving" logo.

Was their proof of any impact of the stack on the delegates? In one session I attended, a participant in the Conference referred to the stack. He mentioned a statistic that had appeared in at least three print items he had received, but his

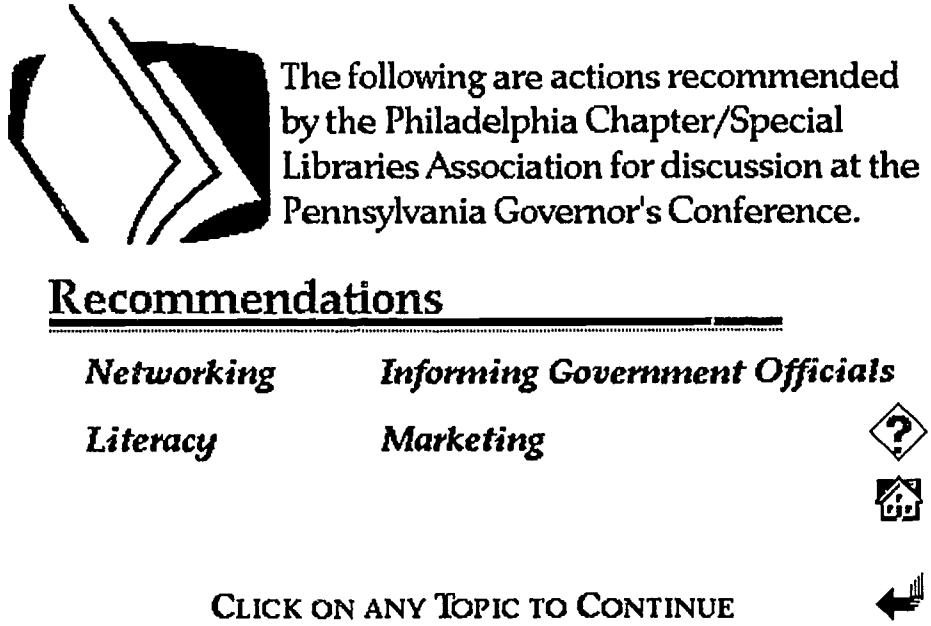


Fig. 3: Key issues of importance were pointed out to delegates from the stack, tied to handouts that reinforced the interests of special libraries before the delegates at the Conference.

memory pulled up the information from a graphic on one of the cards in the stack.

With today's information overload, you need to capture attention. We felt we did that with *HyperCard*. We were able to define and explain special libraries for the delegates, put forward our concerns in issues that were part of the Governor's Conference, and called for action in our best interests.

dance) so members could see their investment. To many, it was an educational experience about *HyperCard* since most of them are versed in IBM computers.

The stack has elevated the image of the Chapter nationally. At SLA's 1991 Conference in San Antonio, the stack will be discussed in a Science & Technology Division program on *HyperCard*. By just having the stack described in the Confer-

Fig. 4: A scanned image of Sara Parker, the Pennsylvania Commissioner of Libraries, in the stack provided a degree of familiarity for the delegates in their course of navigating the stack at the Conference.

Beyond the Conference

Since the Governor's Conference, the stack has been shown at library functions. It was demonstrated during Drexel University's Library School alumni workshop on *HyperCard*. This event promoted the Chapter with our local peers. It served as a reminder of SLA's and the Chapter's presence in Philadelphia, and that we worked on professional projects for the library community at large as well as serve our membership in regular meetings.

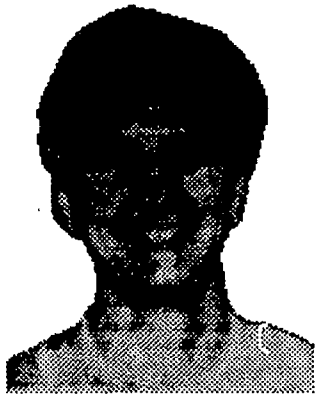
Additionally, the stack was used at our first Chapter meeting (over 100 in attendance program, the Chapter gained exposure to the whole membership. Those who attended the session will remember the Chapter well into the future, as active, technologically sophisticated, and involved. Thus, while the stack's primary use was in the Governor's Conference, we've recycled it as a self-promotional tool.

Promotional Value

At the Governor's Conference, *HyperCard* got our name out to delegates and to the State Library staff who planned the Conference. Now, as more of our peers

see it, they are aware of our Chapter and are more inclined to remain or become members, because they recognize it as a strong and active one, promoting their interests to fellow professionals. Other SLA members from other Chapters see what we've done, take note, and recognize our efforts as leaders in using technology and in bringing our message to our public, which in turn makes our members proud over the accomplishments of their Chapter.

The stack helped promote special libraries, the Special Library Association and our Chapter. It was well worth the Chapter's investment of money and time. We were recognized by delegates, state library staff, our Chapter members, Drexel alumni, and SLA as a whole. It was an easy way to let introduce non-librarians to special libraries, remind librarians that there is an active local chapter and that we are a resource.



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it started slowly... and it grew... and

BY
MARY E.
OKARMA

While I was an undergraduate, way back in the dark ages of the Sixties, using a computer meant punching tiny little rectangle holes in thousands of data entry cards. It was technological tedium. A wrong punch and the entire program failed. Using a computer was difficult, frustrating and mystifying. Becoming a school media specialist, or as New Jersey called them then, "teacher-librarians," on the other hand was simple. Be able to alphabetize with speed and accuracy, be able to count to 999.999, know the difference between an overhead projector and a microform reader, and be able to say "SHHHHHHHHHH" and mean it. A career choice seemed so clear.

Then came the Seventies. School libraries settled into peaceful operation. Happy librarians were suggesting particular books to students and assisting teachers, their secretaries doing all that tedious clerical work. Title II, or IV or IX or whatever number the government used in a given year, was providing sufficient working funds. Of course, now there was more equipment, filmstrip projectors had auto-advance, and some adventurous college libraries were experimenting with computerized check-in/check-out for circulation. But, that kind of expensive mainframe was out of the question for little school libraries. Not to worry, the old systems worked fine. Why fix it if it isn't broken?

Grew ... AND GREW

Uh-Oh, Applesauce

Then the unthinkable happened. The Eighties came. Money for school libraries, and school library secretaries dried up. Vanished. Poof! The VCRs that had served so long and sturdily in U-Matic format were swallowed up by VHS. Personal computers of every variety, from Commodore to Pet, were flooding schools. Unless our community jumped on the bandwagon, warned the computer dealers, we would be left with applesauce on our faces. And worst of all, horror of horrors, our beloved Librarian, who knew every student in the school, and could name every item in the Library, announced her retirement. Guess who got the job? Soon, my face looked like applesauce.

What to do? No secretary. Limited budget. Oodles of new paperwork, for, as the budget shrank and staff was reassigned, duties increased. Well, obviously one of those newfangled computers was the ticket. A few courses at the local computer store and anyone qualified as an "expert." A little cajoling, pleading and ta-da! An Apple IIe arrived in the Library office. Software followed, though some aspects of *AppleWorks* remain a mystery. *Quick Card*, which is still churning out catalog cards, became a staple of the collection. *Print Shop* is currently making banners for around the school. Our problems were solved! Well, for a time, at any rate. Then our calm little world exploded.

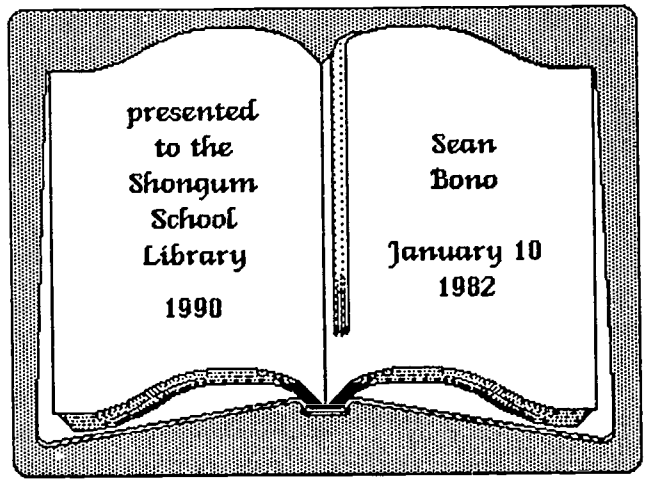


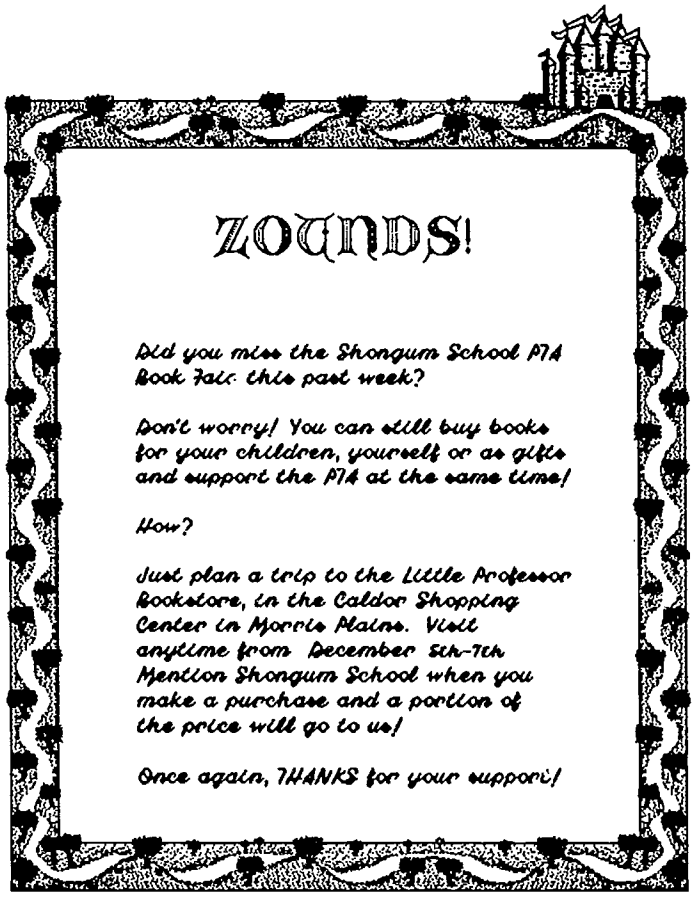
Fig. 1: The Shongum Parent Teacher Association raises money for library books by encouraging parents to "adopt" a book on behalf of their child. Titles are added to the collection, bearing bookplates, created on the Mac, that note the name of the child and their birthday. A Macintosh database keeps track of these books.

Dost Thou DOS or Dost Thou Not?

It was time to go back to school. Real graduate school, where they had computers hooked up to databases in California, and where you could type papers on word processors and see that miracle of modern printing, a laser printer. My little Apple IIe grew smaller and smaller next to Big Blue. Oh, what this marvelous machine could do! Leap databases in a single bound! Process words faster than a speeding typewriter. Crunch numbers in its bare circuits! Look! On the desk! In the work place... its .....no. It was too much. There was just too much "DOSness" to this big blue machine. What to do?

That's when there was a soft "psssst" at the door. Following a favorite professor, with a penchant for the unusual, to a small room, there stood on tables 25 of the cutest little machines ever created. Gleams of wonder sparkled in my eyes. Sparks of enthusiasm crackled through my brain. "They're Macintoshes," she whispered with reverence. "User friendly, easy to set up, multi-faceted and, you don't need to be a computer whiz to make them work for you." The future unfolded before my eyes... Macintosh forever.

But how to convince the people with the money? Ah. A grant. Just as it is always darkest before the dawn, there is poverty before riches. The New Jersey Teacher's Recognition Program brought cash from the state, and with a little help from a very understanding administrator, the Mac was in the Library office. The IIe reassigned to the Library proper for student use, and we were off and running.



ZOUNDS!

Did you miss the Shongum School PTA Book Fair this past week?

Don't worry! You can still buy books for your children, yourself or as gifts and support the PTA at the same time!

How?

Just plan a trip to the Little Professor Bookstore, in the Caldor Shopping Center in Morris Plains. Visit anytime from December 5th-7th Mention Shongum School when you make a purchase and a portion of the price will go to us!

Once again, THANKS for your support!

Fig. 2: Reports home took on a new look thanks to the Macintosh and its graphics capabilities. This notice for the Shongum PTA Book Fair informed parents about a way to the support the Library through purchases at a local bookstore.

"But What're Ya Gonna Use It For?"

Well, that was The Question. There had been dollars for hardware, but software was a little slower in coming. *MacWrite* provided the begin-

ning steps. Memos to teachers, reports to administration, worksheets for students, forms, flyers, etc. Not good enough. Those things could be done on a typewriter. We needed a database. Microsoft *Works* followed. Now overdues on the computer... add a little mail merge, some creative report maneuvering and individual letters could be sent to students, a list made for each classroom and a desk copy for the library to cross off returning items.

Soon more complex reports followed. A proposal to completely automate the libraries in all four elementary schools, complete with graphs, spreadsheet data and four-year projections. End-of-year discard reports, with complete listings of monies necessary for replacements. Purchase orders from databases, complete with notes, ISBN numbers and itemized costs. Transparencies to make the teaching of skills easier. There were things coming out of the library office that had been impossible five years earlier.

Now we were rolling! A few public domain fonts and graphics, a little help from *SuperPaint* and *MacGallery* and new uses came to mind. Every year, for example, our Parent Teacher Association raises money for library books by encouraging parents to "adopt" a book on behalf of their child. It's called the "Birthday Book Club." Titles are added to the collection, bearing bookplates that note the name of the child and their birthday. Until the Mac came along, we used commercially produced plates, upon which the information was typed. Not now! Custom made book plates (Figure 1) are easily created and stored on the Mac. A database of all Birthday Book Club books is on file and information about each book noted and recorded for possible reports, catalogs and the like.

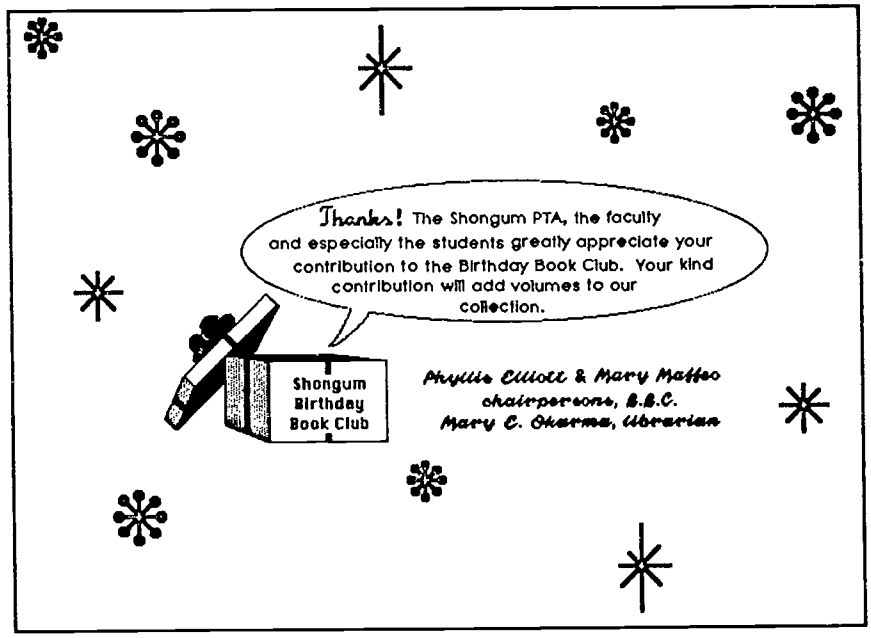


Fig. 3: Simple notes, such as this thank you letter for support of the Shongum School Library and its Birthday Book Club, took on a whole new appearance, thanks to the Macintosh.

Graphics Galore

Memos with unique graphics spurted out of the Mac like rain. Notices home took on a greater sense of humor and style (Figure 2). Thank-you notes became works of art, from someone with absolutely no artistic talent. (Figure 3) Coupons for special treats came flowing out. (Figure 4)

Awards and special notes (Figure 5), printed on parchment paper, took on a new formality. A four-color ribbon added a decorative border in school green. Library volunteer custom certificates were the envy of the school.

The Library with the Mac was becoming a publishing center. Teachers, PTA volunteers and students have all taken a turn. Once they sit at that friendly little box, well, sometimes the Librarian can't get to her own desk. It was, and is, a productive tool, producing high level graphics, notes and published material with, happily, little need to pour over a manual or attend complicated courses. Perhaps in the dictionary, next to the definition of "user-friendly" they should put a little picture of a Macintosh.

A modem and communications software added bulletin boards. The National Education Association Bulletin Board (1-800-541-0816) in Washington, D.C. provides the service to all current NEA members. Now, educators can talk

Fig. 4: With the Mac and graphics software, coupons, certificates, and other documents were possible for Shongum School Library as promotional materials.

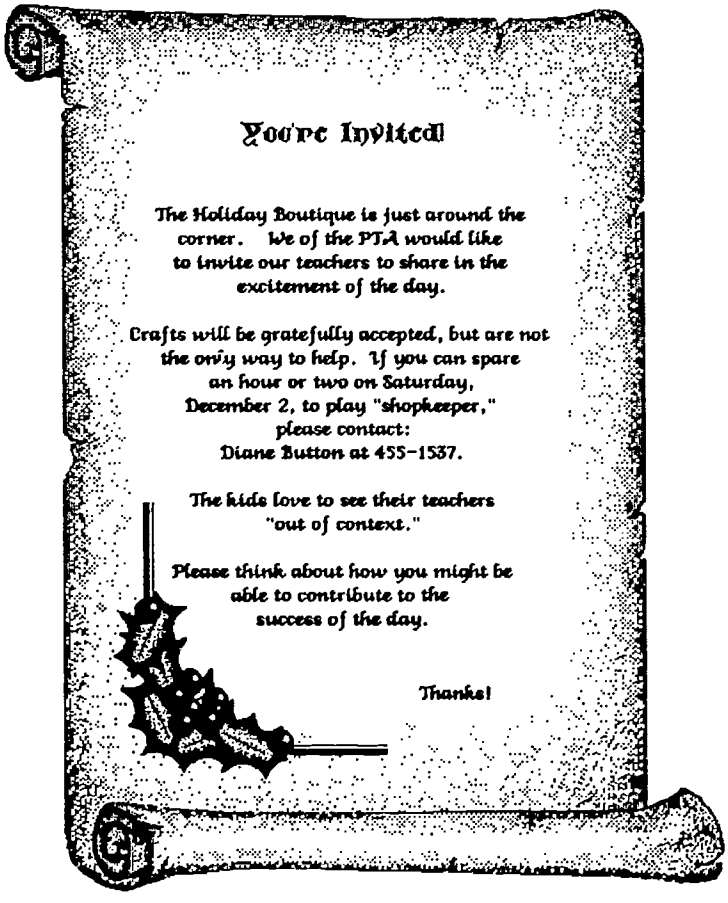


Fig. 5: Special awards and certificates took on a whole new texture with color ribbons and parchment for students and their parents, by virtue of the Mac's ability to synthesize graphics and text.

to other educators all over the country, helping each other discover creative solutions. When funds become available, perhaps there is a CompuServe in the future, or other such service.

Key Word: Possibilities

We have seen the steady march of the computer turn into a downhill torrent. Each day, information on new software, hardware and technological advances inundates our mailboxes. Faxes, laser disc/computer combinations, CD-ROM drives, electronic encyclopedias and other magical devices hold within the possibilities of new growth., new ideas and new ways of using the computer.

Our libraries will never again be the simple file, card, and book repositories of the Sixties. Whether we want to or not, the personal computer, be it Mac or Big Blue, is here. No longer can its contribution be denied, ignored or delegated to the trivial. The ideas discussed here are merely scratches on the surface of the mirror of possibilities. Given time, funds and creative discussions among colleagues, there is no doubt that amazing realities will come to pass. Maybe that *HyperCard* stack for the Newberry and Caldecott books will finally come to fruition. And a *FileMaker* database for our audio-visual software will produce printed catalogs for staff and students.

The question is no longer "What are you going to use it for," but "How did we ever get along without it."

Consider the possibilities.

Mary E. Okarma has been employed by the Randolph Township, New Jersey schools since 1971. She was an elementary classroom teacher for eleven of those years, and a librarian since 1982, earning a Master of Letters from Drew University in 1984, and a Master of Library Service from Rutgers in 1987. Currently, Mary is assigned to the Shongum Elementary School as Educational Media Specialist. She was awarded the New Jersey Teacher Recognition Grant, with which she "Macintoshed" her library office.

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The HyperCard Library Instruction Project

by Joan Parker

Brief History

The *HyperCard* Library Instruction Project (HLIP) was established after a series of discussions concerning the rapid proliferation of *HyperCard*-based library tours. There was the real possibility that enthusiastic librarians would each independently begin developing stacks covering library instruction, duplicating their efforts in inventing similar routines. Harriet Talan of the J. Paul Leonard Library of San Francisco State University shared my concern that many potential developers were

not able to communicate or share the fruits of their labors. Ultimately, librarians would spend valuable time developing what had already been developed. Much to our surprise, we both agreed that something should be done and we would be willing to spend the time and effort to spearhead such a project.

Weeks were spent compiling guidelines for computer-aided instruction (CAI), interface design and software development; writing a philosophy of the project; and gathering all the necessary documentation for future project members. We agreed that all stacks, or modules, should be developed by teams with at least two stages of testing and development. The next step was to place a call for volunteers. At present we have 24 developers and 28 evaluators from the United States, Canada and Australia working on HLIP modules. (Figure 1)

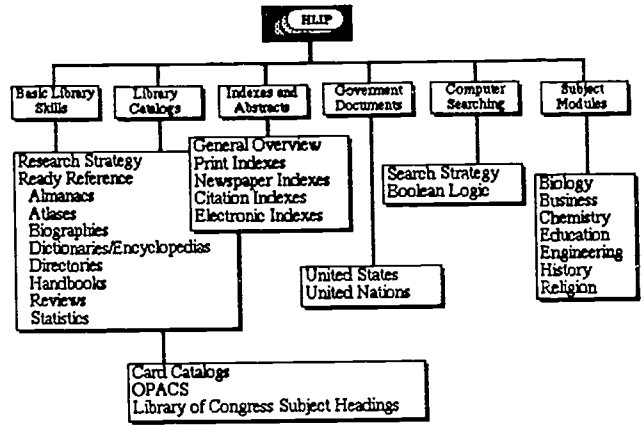

Fig. 1: *HyperCard* Library Instruction Project Modules are being developed in a variety of subjects and for a wide range of purposes within libraries by 24 developers from the U.S., Canada, and Australia. These stacks follow designs and guidelines agreed upon by members of the *HyperCard* Library Instruction Project.

The first HLIP meeting was held in the summer of 1990 at San Francisco State University. It was devoted to adopting standards, guidelines and criteria for the design of stacks. A project template was designed, tested, approved and distributed to stack developers in late 1990. (Figure 2)

Several meetings have been held since that time at the Apple Library in Cupertino. The next step in the project will be to obtain feedback. Each team is assigned one or more evaluators who have agreed to test each module using librarians and students, record any problems, comments or observations, and report to the developers. The first evaluation stage occurred in May 1991, with an anticipated release of the full project in Fall 1992.

Project Philosophy

Many of us involved in this Project participate directly in library instruction. We know the importance of reaching as many users as

possible with as many instructional methods as libraries can make available. (see HLIP Statement below)

HLIP will provide an optional way of learning library skills. Each module is an interactive, computer-aided-instruction lesson with clearly stated objectives. The modules are designed to maximize flexibility and may be modified for the needs of each institution.

HLIP is a non-commercial project, relying on volunteer time and efforts. We believe that stacks should be widely available at a nominal price. At

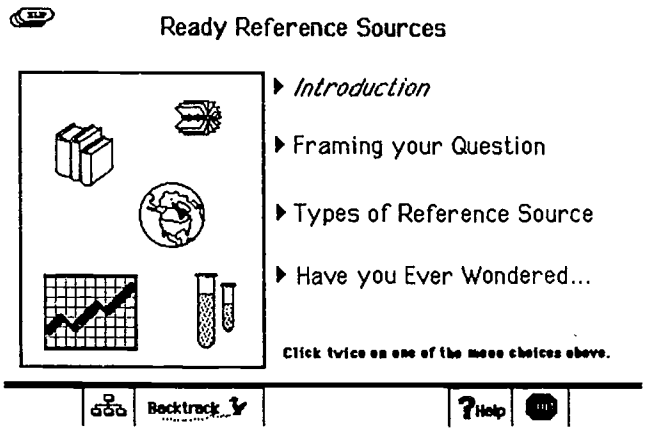

Fig. 2: A sample draft menu from a HLIP Module for Ready Reference Sources provides a view of the basic format, with navigational choices and a straightforward, uncluttered screen design.

present we are looking at academic courseware distributors and the Apple Library Users Group as possible channels for distribution. The fruit of this Project will be most valuable if it reaches the largest possible audience, both in terms of those developing HyperCard stacks in libraries, and patrons. Only the future will determine if the efforts of this group in standardizing stack design produce new tools in bibliographic instruction that are both informative and intuitive.

HyperCard Library Instruction Project
Statement of Purpose and Philosophy

HLIP's Statement of Purpose and Philosophy essentially outlines a program for developing library skills for patrons, using a basic set of agreed-upon standards for manipulating *HyperCard* as framework.

The *HyperCard* Library Instruction Project was established in May 1990 to develop an integrated and standardized set of instructional modules that offer a core of basic library skills primarily oriented to the post-secondary school adult library user.

These modules provide an optional way of learning library skills and can significantly enhance the learning process for users who are seeking to learn basic introductory techniques, refreshers, remediation, or more sophisticated subject search strategies. The modules may be assigned by teaching faculty, assigned by librarians in structured teaching situations as an adjunct to other modes of instruction, recommended by librarians in the frequent situations in which they have only a very limited time to spend with individual users, or incorporated into a library skills workbook program.

Module development is based upon the most current computer-based learning design guidelines and will emphasize interactivity,

self-paced individualized learning, and thorough testing of the modules.

The project is collective because designing and creating computer-assisted instructional materials is extremely time consuming. The modules are standardized in order to facilitate their collaborative development, to allow the end user to move from one module to another with ease, and to permit adoption by a variety of institutions.

HyperCard is an appropriate authoring tool because it is easy to learn for development purposes and gives module implementation a relatively extensive base in libraries. Librarians wishing to adapt stack may do so without mastering *HyperCard's* scripting language.

Libraries can modify the modules, adapting and tailoring them to their own environments. Modules may, for example, be modified in the following ways: combined and put on high density discs; converted to IBM format; incorporated with more high-end software such as multi-media animation products, CD-ROM or interactive video.

Modules are distributed to libraries that want to use them. HLIP, a non-commercial project, cannot function as a distribution agency; it seeks an appropriate distributor of academic courseware that makes HLIP products available at the most modest charge. Libraries or other agencies that use these modules are asked to preserve the credits to HLIP and the original developers.

Adopted Thursday, July 27, 1990

Joan Parker (shown below), when not galloping off into the sunset, is Life Sciences Librarian at the University Library, California State University, Long Beach. She's still looking for a good portable cellular phone she can attach to her steed's saddle.

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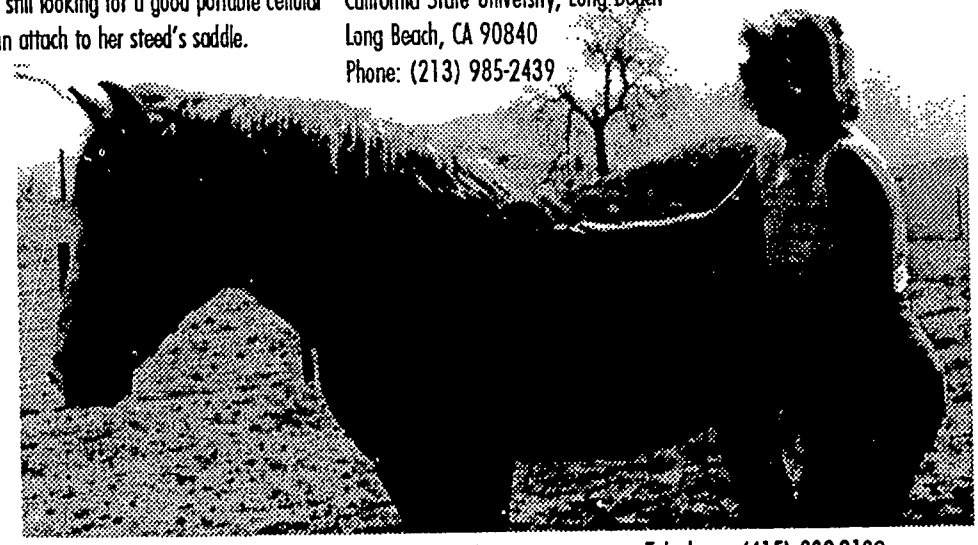

Harriet Talan, Joan's co-conspirator on HLIP, may be reached at:

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HOW I LEARNED TO STOP WORRYING... (and Love the Macintosh)

Barbara Passoff

Let me start out with a small confession: until a few months ago, I never really considered the Macintosh to be a "real" computer. Oh, sure, it was fine for desktop publishing and graphics, and as a beginning step for computer-phobes. But for day-to-day word processing, spreadsheets, and data management, you needed a PC.

Okay, so I was wrong.

What changed my mind? Well, in September, 1990 I got a new job as Microcomputer Services Librarian, at Simmons College in Boston, Massachusetts.

First, a little background information. The Simmons College Library houses both a Microcomputer Lab and Classroom. Currently, the Lab has 12 Macintosh SE computers with hard disks and dual floppy drives, and 12 (old) Compaq Portables with dual floppy drives (360K) and a 20 Mb HardCard. The classroom has 12 Macintosh 512Ks with dual single-side floppy drives, and 12 Compaq Portables with dual floppy drives. With the exception of the SEs, all of our equipment is woefully outdated—dare we say ancient? We are hoping for some grant money to upgrade and expand both the Lab and Classroom.

And what about my background, you ask. The first time I used a computer was in Library School, way back in 1985-86, when 256K memory was a lot. We had a Lab with both IBM and Zenith computers. One of my Professors actually (gasp) required us to use the computer to type our term papers. I have to admit, after I used a word processor to write and revise my papers, I vowed to never use a typewriter again.

I won't bore you with the details of my post Library School escapades. Suffice it to say that, besides being overworked and underpaid, I got to play with computers. I started out slow with Apple IIe/IIgs, where I was introduced to that wonderful arch-criminal, Carmen Sandiego. Then I moved up to the "big time," Compaq DeskPro and IBM PS/2s. Since I was usually the only one brave (or foolish) enough to just sit down at the computer and try to figure out why it was or was not working, I became a sort of computer guru. This eventually led to my current position as Microcomputer Services Librarian at Simmons, where I met the Mac.

Now, I was very up front when I took this job: I had never really used a Macintosh. However, everyone, including myself, didn't think that would be a problem. After all, the Mac is designed to be easy to use.

What do you mean, I have to use the mouse?!

I found myself scheduled to teach a *MacWrite* workshop the second week after I started my new job. I had to learn the Mac *fast*. It didn't take me too long to get the hang of opening and closing windows, clicking and double clicking on those sometimes-too-cute icons, and discarding, or throwing away, files. Okay, so I still get a kick put of the way the garbage can gets fat when I throw away a particularly useless, yet long, memo. I felt ready to tackle *MacWrite*.

Of course, since we only have 512Ks in the classroom, I must teach the old version of *MacWrite, 4.5*. Imagine the culture shock. I'd been using *WordPerfect 5.0*. I don't need to know how to spell, the program has a spell-checker. Well, I do have a dictionary, so we're not talking a real disaster here. But I did have a little trouble getting used to the mouse. While my brain kept going: Function Keys, Arrows, *MacWrite* insisted on going: Click, Drag. It was not love at first sight.

After a lot of trial and error, and error, and error, I got the hang of using the menus, and selecting large

amounts of text. I still have a little trouble selecting just one letter. I can't tell you how many times I've wanted to feed my mouse to my cats. Life has improved since the software fairy left me a copy of Microsoft *Word 4.0*, which allow you to use the arrow keys, and function keys if you have them. Of course, I'm using a Mac Plus, and I don't know what possessed the keyboard designer to place the arrow keys in such an inhuman pattern. I often find myself covetously glancing at the Media Center's SE/30, with its extended keyboard, complete with function keys, and a normal arrow keypad. To add insult to injury, they also have a wonderful trackball.

Although *MacWrite* is far from the perfect word processor. It is a good introduction to the Mac: simple, and straightforward. Students can learn to use it well with a minimal amount of training. Plus, I have yet to meet someone who doesn't enjoy playing around with fonts. Ah, yes, fonts. The ease and fun that goes along with changing fonts on a Mac was really the first thing that broke through my PC prejudice. Sure, you can change fonts in a *WordPerfect* document, but doing it is a pain, not a joy. And I was beginning to realize that *Word 4.0* does everything that *WordPerfect 5.0* does, and my final results always look better when I use the Mac.

A new arrival...

But I'm a stubborn person. I'm not going to give up PCs that easily. I still need *Lotus*. I never loved using *Lotus*, but I always assumed that using a spreadsheet was akin to visiting your Dentist. You don't like to do it, but you have to (at least my husband tells me I have to visit the Dentist; I'm not convinced). I think it was a few days after teaching a particularly grueling *Lotus* workshop that I received a free copy of Wingz. I remember looking at the disks and thinking: "Oh, how cute, a baby spreadsheet. I wonder what it can do." Well, that sealed my fate.

Admittedly, I don't do anything really fancy with my spreadsheets, just basic budgeting, and maybe a few graphs. So, I gave *Wingz* a try, and, frankly, I couldn't believe I was using a spreadsheet. I could clearly see each cell. I could change both column and row sizes. I could change fonts and sizes as easily as in a word processor. Creating a graph is a simple as clicking on the chart icon, selecting the data, and placing the graph on the sheet. I was in love.

It's awfully lonely over here...

I could no longer deny it. I liked to use the Mac!

I know I'm not the only one who feels this way. Many times I walk into the lab and find people waiting to use a Mac while most, if not all, the Compaqs sit unwanted, lonely and forlorn. Sometimes I feel like I've walked into that Apple ad where the Boss looks out his window at the department's two computers, one an idle IBM, the second a busy Mac, which has people waiting to use it. The Boss' chief Toady comes in and asks Mr. Big; what he's doing. "I'm trying to see which computer is the most powerful." The toady answers with some silly computer jargon, but the Boss disagrees. "I think it's the one people use," Mr. Big says. And I'm beginning to think that's the truth.

I've been known to go a whole week without even turning on my Compaq. Still, I'm not quite ready to give up on PCs. My Boss has promised me a new 386 machine with a color monitor, and I can't wait to get my hands on Windows. Yet, I know when I get it, I'll be wondering if it's as good as my Mac. And this from the woman who, just 5 months ago, thought the Mac was little more than a toy!

Barbara Passoff is Microcomputer Services Librarian at Simmons College in Boston, Mass. She spends much of her day trying to resurrect dead and dying computers (PCs and Macs) in the Microcomputer Lab and Classroom. Mail will find its way to:

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Boston, MA 02115
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Reach Out And Type At Someone:

(or How I found happiness in sleepless nights on the Fidonet)

Alan Rowoth

Information is a very valuable possession these days. In libraries, we try to give free and open access to all. Sadly, we are often limited in the proximity in which we can exchange information. I can hand you a book or tell you who won the Grammy for the best contemporary folk album (Shawn Colvin – "Steady On", in case you're interested). But how do I share information with an individual across the country or around the globe? Especially if we've never met, how do I make that connection in the first place?

Telecommunications save the day to reach anyone any where. With almost any type of computer and a modem, I can connect to any number of online resources. Many of these are very interactive. The BIG players include CompuServe, GEnie, America Online, AppleLink, Dialog, the Internet, and Fidonet; but there are many smaller systems. Some of these like The WELL, The Point and Easy SAAbre have gateways from other online systems to make them more accessible around the globe.

Fidonet

Fidonet is an international network of over 10,000 computer systems that connect to send netmail (private email) and Echomail (public discussion groups). In addition, files can sometimes be requested over the network and there are often local discussion groups as well. Fidonet communications protocols were developed in 1984 by Tom Jennings and they allow hardware and software of many different types to participate in the network. Our planet is divided into zones, zones have regions, regions are divided into nets, and nets have hubs, hubs serve nodes, and nodes sometimes have points. Points are sort of the electrons of the Fidonet universe. Thus my Fidonet address is 1:260/328.10. The USA is in zone 1, my "boss" is node 328 off of hub 260 and I am point number 10.

Fidonet is not a real time system like CompuServe or the Internet. Mail and files are transported in and out of the local node (boss) during preset mail hours that connect it to its hub and they find their way, bucket brigade fashion across the net. I routinely exchange ideas with net members in Australia and Germany. There is a variable time delay though depending on how messages route through the net. There are even hooks to send messages into UUCP and CompuServe, these can sometimes take over a week to arrive.

Why, if this is so much slower than "the competition", do I like it so much? I have three reasons. First, from a sociological and subjective perspective, excellent people hang out on Fidonet. They don't have to have an expensive computer system or work for a big corporation or go to a huge university. They just have to care enough to get involved and have very minimal hardware. I daresay, you could do communicate on Fidonet with a $150 TRS-100 if you wanted to.

Secondly, from an economic standpoint, Fidonet is essentially free. Some bosses charge a small fee to defray their costs, but nothing like the big networks charge. It is almost unbelievable to me that a group of over 10,000 amateurs have agreed on something as involved as Fidonet. They put in an incredible investment of time and equipment and have truly earned my respect. If you get involved with Fidonet, make sure that you treat it as the privilege. Information shouldn't belong only to the rich, but the costs of providing it are inevitably borne by someone. I process typically around 500 pieces of Fidonet mail a day and pay no connection charges whatsoever. I couldn't afford to do that on CompuServe.

Copernicus

Finally, the software – *Copernicus* – to work on Fidonet is great. It is the point software that I use to connect to my boss. *Copernicus* runs totally unattended and allows me to process my mail in a fraction of the time that I would spend on any other system. Currently I receive mail and news on CompuServe, America

Online, AppleLink, the WELL, and the Internet) and I spend less time on the 75% of my mail that is Fidomail than the other 25% across the other systems. There is an offline system for CompuServe called the *Navigator*. It greatly speeds mail and some file transfers, but limits me in other ways from my use of the system. In addition, CompuServe is limited locally to 2400 baud and I can exchange data with my Fidonet boss at 14,400 baud. Many Fidonet boards have high speed modems.

install. Once configured, you won't have to interact with most of that information unless you switch bosses, buy a new modem, or make a drastic change of some other sort. A new version of *Copernicus* should be available soon which will only improve this fine program.

There are some interesting features built into *Copernicus*. It has an address book to hold Fidonet addresses for all your private mail and an area menu that routes your Echomail. It allows you to simply request from and send files to your boss. Most of the rest is just navigat-

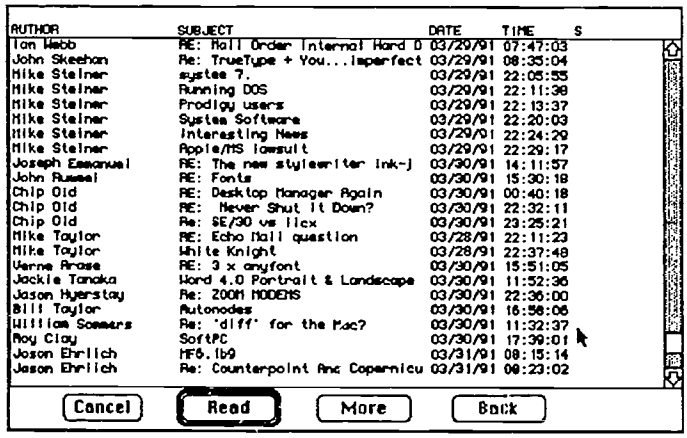


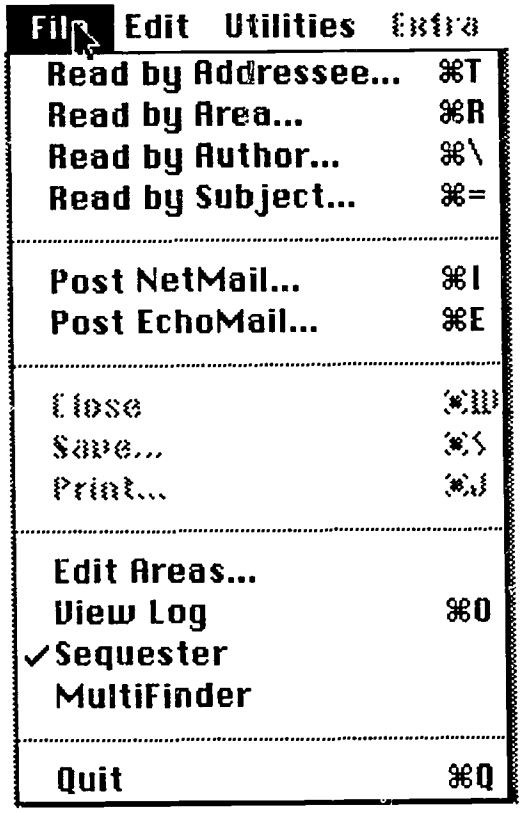
Fig 1: Mail received via Fidonet can be sorted with *Copernicus* by author and subject, with date and time stamps affixed to each piece.

For me, the key is *Copernicus*. I am convinced that it is the cheapest, most trouble free way for a Macintosh owner to join the electronic community. The software is inexpensive, and arrives on one floppy disk with an excellent 88 page manual. The setup is pretty straightforward with one caveat. You must have already found a Fidonet system that will let you operate as a point off of it (This shouldn't be too difficult, as points are generally less trouble than real-time users). The sysop has to give you a bit of information on your setup—his data phone number, his Fidonet address, your point number, Echomail conferences that he subscribes to, and possibly some passwords. *Copernicus'* manual does an excellent job of preparing you for the

ing through the stacks of mail, reading, replying, quoting, and sending new mail. (Figure 1) There aren't a lot of flashy icons, but there are pull-down menus for everything and most functions can be controlled with faster control-key combinations once you get used to it. (Figure 2) Actually, there is such a Spartan look to *Copernicus* that someone could write a DOS software that ran just like it. Sadly, there is currently no good point software for IBM compatibles at present so those users are "bending" BBS and mailer software for the IBM to allow them to point in. This appears to be beyond the range of anything but a power communications user and limits MS-DOS users to the slower, real time bulletin board access. Most boards have access time

ceilings that would prevent the user from accessing anywhere near 500 pieces of mail a day, so their bandwidth is limited. My average connect times are under 10 minutes unless I FREQ (File REQuest) and the subsequent offline processing of automatically deleting my old messages, decompressing new ones, and delivering them to their appropriate areas tends to run me another 15 or 20 minutes. (Figure 3) I am usually asleep when it's happening, so that doesn't annoy me in the slightest.

There are many Fidonet conferences, most of which are winnowed by bosses for local consumption and demand. Many of the national conferences appear on a document called the "elist", but often hubs will have their own sub-conferences, and bosses their own local interest groups. Chris Zazzara, my boss, currently carries 15 national echoes, 6 hub echoes, and 8 local groups. I am very interested in the LIBRARY echo hosted by Nancy Petersen and I also am a musician. Chris added 3 music conferences at my request MUSIC, MUSICSYN, and CD_ECHO. They have become very popular with other points. His system also has echoes on cooking, sailing, and making your own beer.



Fig, 2: *Copernicus*, the software driver for Fidonet, features menus for everything, with keyboard equivalents clearly marked as in this example of the File menu.

A Personal view of telecommunications

Every system has it's own strengths and weaknesses. CompuServe, America Online, GEnie, and AppleLink are faster ways to interact with most software companies and receive software updates. They also have large file transfer areas. Some pay services have online shopping malls, travel agents, encyclopedias, and stock brokers; but you pay for that convenience. They are tied to a lot of old hardware (slow modems, clunky computers with limited filenames and less

than state of the art transfer protocols) and they are slow to upgrade, but the general level of electronic services has improved greatly. IBM and Sears have collaborated on a low cost system called *Prodigy*. People complain bitterly about *Prodigy* being slow and clogged with the commercial messages that help keep the cost down. I haven't been able to preview *Prodigy* because of problems I've had with their Mac telecommunications software. Some are fans of *Prodigy* in part because it is inexpensive but not as cheap as Fidonet.

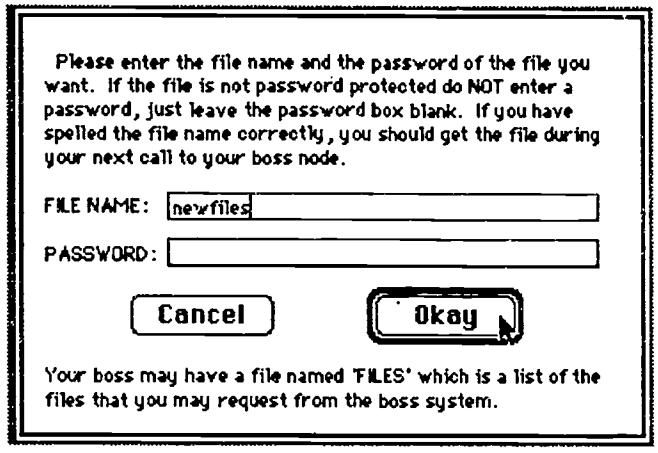


Fig. 3: Files are transferred automatically on *Copernicus*. This dialog box manages the transfer by specifying files and passwords from the local boss or manager of the neighborhood node on Fidonet.

A new program for UUCP mail called *uAccess* from ICE Engineering that has many of the features of *Copernicus*. Due to the complex nature of UUCP, I believe it is more complicated than *Copernicus*. Also, you have to have an account on a UUCP host. Inexpensive dial-in access to the Internet—at a variety of different levels—is being provided by a new company called Performance Systems International. They are still priced out of reach of most individuals, but even small companies may find great advantage in their services. In the future, the National Research and Education Network (NREN) may provide a high speed backbone for many different networks to speed their international data transfer. Future interconnectivity between all of the services I have mentioned will only become easier and less expensive.

Apple's Communications Toolbox bodes well for us. A set of building block routines for communication software programmers, it is integral to System 7. I hate having to have *Copernicus* and *MicroPhone* and CIS *Navigator* and the AOL software and AppleLink all cluttering up my communications folder. Perhaps the Communications Toolbox will cut down on all of this digital repetition.

Where is all of this leading? I hope to an era where voice, data, and facsimile communications can all be effectively managed and used, to quickly and inexpensively shuttle information to those who seek it. Bandwidth and speed will go up, costs will go down, and compression techniques will squeeze sound and graphics into manageable hunks. Standardized data formats and interfaces will yield portability across platforms. Individually tailored user profiles will send "knowbots" scurrying around the networks scanning for the most useful tidbits while we devote our time to compiling, analyzing, and sharing the accumulation of our efforts. Your participation can only help speed that progression.

See you online!

Alan Rowoth, shown here in a feat of prestidigitation, is a Library Media Specialist at the Liverpool Public Library. He is the kind person who needs an alarm clock to tell him it's time to go to bed. A musician and avid music collector, he will buy anything round with a hole in the middle. He truly believes that food isn't seasoned properly unless it is painful to eat.

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Fidonet: 260/328.10
CompuServe: 73775,1216
Internet: arowoth@well.uucp
Bitnet: eric05@suvm
America Online: AlanRowoth
AppleLink: UG0314

USCINFO:

A Development Platform for Tomorrow's Information Rich Environment

The University of Southern California Library's five-year automation plan recognizes the strategic importance of the recent emergence and explosive growth in the area of online indices, information tools, and full-text databases. A number of online information resources are available today. A significant number of commercial vendors already provide these resources to campuses and other organizations for local use and direct end-user consumption. Accompanying the growth of commercially-available information resources

John Waiblinger

has been a parallel explosion in the kinds and amount of public domain resources and services under development by a broad array of government agencies, non-profit organizations, and individual authors and software developers. Much of this material is now increasingly available through various electronic distribution networks such as Bitnet, Internet as well as commercial distribution networks like CompuServe. In addition, there is increasingly "local" activity on regional BBSs. The proposed high speed NREN will serve as a catalyst for development and delivery of yet a richer and broader array of materials serving a still larger audience of academics, researchers, commercial users, and the general public. Concurrent with national and commercial developments, at the local campus level additional information resources and technologies are being both acquired and developed in-house and made available to the campus community. Taken together, these developments help to create a "user community" that is more knowledgeable about and increasingly eager to have access to these resources and services.

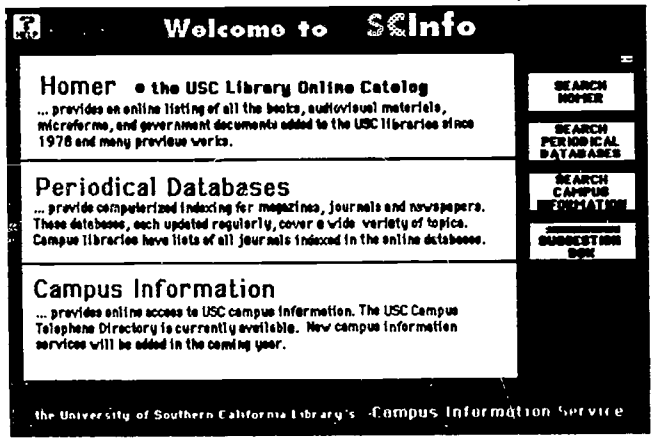


Fig. 1: Services available on *USCInfo* include three different campus information services as shown on this screen.

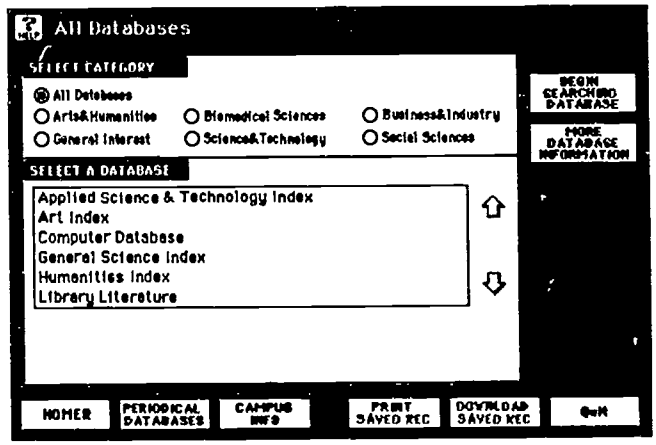


Fig. 2: The *USCInfo* Periodical Database service includes 14 different databases. The database selection screen provides two methods of viewing the available periodical databases: Ability to view all databases in alphabetical order or the ability to list databases by broad subject category. When a database is selected, a brief description of its area of subject coverage is provide at the bottom of the screen.

USC's top priority is to create a single, online information system that offers public access to a wide selection

of information resources and services — in short, to provide a gateway to an "information rich" environment for students, faculty, and staff in the USC community. We have identified the following information services as key components of the online campus information system under development at USC:

- Online Catalog of library holdings, including circulation status information;
- Specialized subject area bibliographic databases, indices, and publications;
- Campus information files and services including online telephone listings, class schedules, event calendars, service directories, etc.;
- Information about and access to resources available on both local and national networks;
- Commercially available full text resources;
- Numeric and "raw research data" stored and available only in electronic form;
- Full-text versions of public domain documents;
- Remote document request and delivery capabilities;
- Indices and guides to Image Databases;
- Image delivery; and
- Knowledge management tools, including system tutorials, expert system navigational tools, data and information manipulation tools, etc.

USC has begun to lay the foundation for delivery of these services through *USCInfo*, the university's integrated campus information system. (Figure 1)

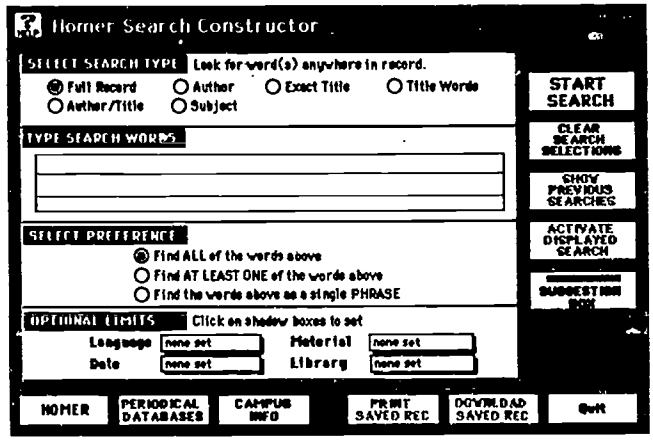


Fig. 3: The Search Constructor seen is available in and used to construct searches in all the *USCInfo* services. While each of the *USCInfo* services provides similar search features and search options, there are some differences specific to the database being searched. A user may choose to simply enter search terms and use the system default search options, or use and explore the additional features provided.

USCInfo 2.0: The Current Publicly Available Information System

In January 1990, USC began working on meeting its goal to create a single access, easy to use system for existing library bibliographic information resources as well as planning for the addition of campus information files and resources to the system. The Library Online Catalog (HOMER), 14 locally mounted periodical databases (Figure 2) (see Appendix for details), and the campus telephone directory were all consolidated on an IBM 3090 mainframe using the BRS Search

software. Providing and consolidating the files was only the first step. How to make all of these different information resources easy to use for a potential university user population of about 40,000 individuals and providing the proper access infrastructure was the real challenge!

To meet this challenge, USC chose the Macintosh for access and *HyperCard* as the interface development tool. Providing workstation based access (instead of terminal access) to the mainframe system allowed for installation of the proper network environment in the Library. The Macintosh was easy to incorporate into the campus' standard network environment. All communication from the Mac to host is via standard TCP/IP protocols, using *MacTCP*. Most importantly, every public access Macintosh in the all of the USC Libraries are able to "see" and access all other hosts on both the campus, as well as the Internet, networks. This provides the capability for *USCInfo* to access additional host systems, a planned system enhancement already under development.

This workstation model has allowed separation of the front end, user interface from the host. We have used *HyperCard* to develop the user interface. Using *HyperCard* has allowed the development of a graphically attractive, consistent, and easy to use interface to *USCInfo's* multiple information

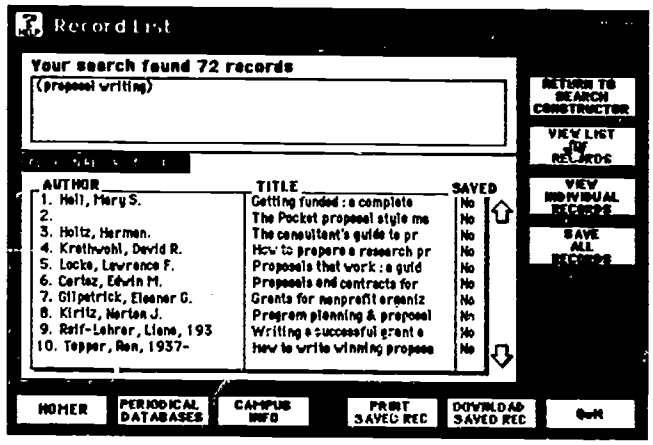


Fig. 4: The user is provided information on the number of records retrieved by the search and provided a short Author/Title list of the retrieved citations. This list can easily be browsed backwards or forwards, and the individual citation can be displayed by clicking on the desired record in the list.

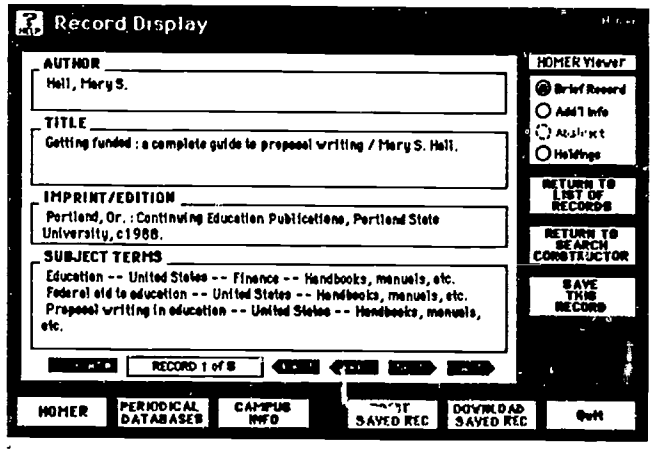


Fig. 5: The Brief Record display is always provided first by the system; this display provides the most important information about the citation. From the Brief Record display, the user is able to also view Additional Information, Abstract (when available), and Library Holdings information.

resources. This should be evident from the sample screens shown in Figure 3 and Figure 4. Users have found *USCInfo* friendly and easy to use. We feel this interface design has removed the "computer" as an impediment to system use. (Figure 5) The training sessions and individualized help provided by Reference Librarians now focuses on the intellectual aspects of choosing the right resource and constructing a good search rather than instruction on how to use and manipulate (Figure 6) the computer.

ment for interface design. The interface was designed by a broad group of librarians and programmers. *HyperCard* allowed the design environment to be iterative and interactive—screens and screen features could easily be designed, redesigned, and refined. This working environment created the organizational links and exchanges so necessary to success of the project.

Finally, the time frame for conceptualization of the system to its actual release for public use was only nine months. *HyperCard* provided the kind

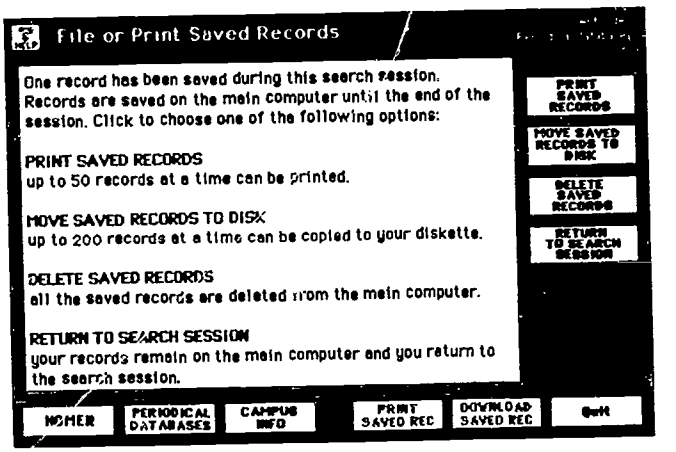


Fig. 6: Throughout the search session, the user is able to "mark" records to be "SAVED" for later printing or downloading to disk. This screen illustrates these features.

The Development Environment

Development and operation of *USCInfo* is a collaborative effort between the University's Center for Scholarly Technology, University Computing Services and University Library. Work on *USCInfo* has fostered organizational cooperation and individual interaction between these diverse groups and considerably expanded and enriched the Library's role, importance, and involvement in addressing the "information technology" issues facing the campus. Use of *HyperCard* as the interface development tool, allowed an extremely collaborative and participative environ-

of tools and flexibility to make this pace possible.

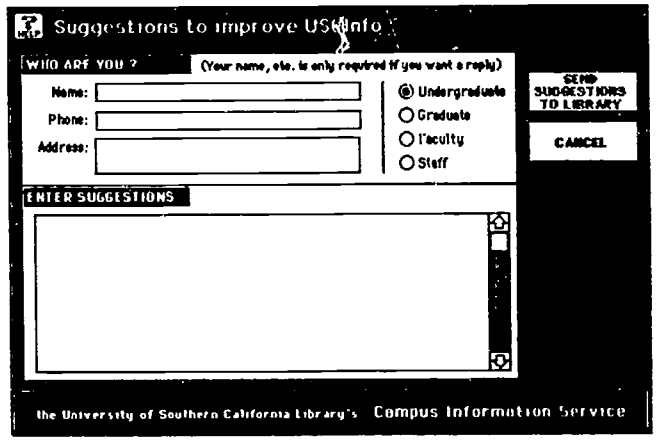
The current *USCInfo* workstation based access system provides and excellent foundation for future expansion and enhancement. Our development efforts have and will continue to focus on three key areas.

User Interface

USC has begun, and continues, research into and development of sophisticated, yet easy to use navigation, search/retrieval, and display interfaces. These tools must utilize new

and increasingly powerful graphics and windowing capabilities now available through workstation technology. Today, Library *USCInfo* access is provided via 126 Macintosh SE/30 workstations using the power and graphics capabilities of HyperCard front end interface to access a large selection of library resources and an initial campus information resource file. Major expansion of campus information resource availability is planned for the summer of 1991.

Fig. 7: Users are provided the ability to easily send suggestions and requests for system enhancements to the system developers using this feature.



System Architecture and Infrastructure

USC has begun to build the appropriate local network structure and begun development of an appropriate system architecture to support a distributed, client/server based information system. Today, Library *USCInfo* access is provided through a workstation to host based connection via standard TCP/IP protocols on a high speed FDDI campus network. This basic construction will allow us to develop access to multiple information servers via the network through a common client interface. Connection and access to a second information host/server on the network providing a full text based service is planned for summer of 1991.

Standards

Network communication, data structure/data definition and client to server interface standards become increasingly important as we tap a broader range of information resources and serve more and more users on more and different systems. Incorporation of developing Z39.50 standards into the *USCInfo* system architecture has been identified as a major focus point for future development efforts.

Next Steps

As the number of available electronic information resources continues to grow and diversify, new services and features will continue to be developed for *USCInfo*. Our current Macintosh production and development environment provides an ideal foundation for such continued growth. This summer we will be conducting a major review and evaluation of the current interface (including evaluation of the many comments we've received

via the online "Suggestion Box" feature [Figure 7]) to both improve and add new features to the *USCInfo* interface. The Center for Scholarly Technology, University Computing Services, and University Library at USC would like to share the results of our work with other institutions. We welcome opportunities to discuss relevant methods for sharing and applying our work to related development efforts at other institutions.

Appendix

Available Periodical Databases on USCInfo

The periodical databases available on *USCInfo*, each updated regularly, cover a wide variety of topics. Available databases are listed below in alphabetical order:

Applied Science & Technology Index - 1983 to present
Art Index - 1984 to present
Computer Database - 1986 to present (includes Abstracts)
General Science Index - 1984 to present
Humanities Index - 1984 to present
Library Literature - 1984 to present
Magazine Index - 1983 to present
Management Contents - 1986 to present (includes Abstracts)
MEDLINE - 1980 to present (includes Index Medicus, Index to Dental Literature, and International Nursing Index abstracts). Offered jointly by the Central Library System and Health Sciences Libraries
National Newspaper Index - 1981 to present for the following 5 newspapers: Christian Science Monitor, Los Angeles Times, New York Times, Wall Street Journal, and Washington Post
PAIS - 1972 to present (includes Public Affairs Information Service abstracts)
PsycINFO - 1984 to present (includes Psychological Abstracts)
Social Sciences Index - 1984 to present
Trade & Industry Index - 1982 to present

John Waiblinger is the Assistant University Librarian for Academic Information Services and Associate Director, Center for Scholarly Technology at the University of Southern California. He has primary overall responsibility for management of the *USCInfo* Development process.

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Phone: (213) 740-2930
Fax: (213) 749-1221
Bitnet: waibling@uscvm.bitnet
Internet: waibling@vm.usc.edu

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Internet: karl@vm.usc.edu
Bill Scheding, Director Software Development, Center for Scholarly Technology
Internet: scheding@vm.usc.edu
Chris Sterback, Manager, Bibliographic Information Services, University Library
Internet: sterback@vm.usc.edu
Lucy Wegner, Head Library Automation Development, Center for Scholarly Technology
Internet: wegner@vm.usc.edu

VENDOR INDEX

The following is a listing of the vendors of hardware and software products mentioned in these pages:

ABC News Interactive
Optical Data Corp.
30 Technology Drive, P.O. Box 4919
Warren, NJ 07060
(800) 524-2481
Election 88

Aldus Corp.
411 First Street South
Seattle, WA 98104-2871
(206) 622-5500
PageMaker

American Airlines
P.O. Box 619616, Mail Drop 1373
Dallas/Fort Worth Airport, TX 75261
(817) 540-6950
(800) 331-2690
Easy SAAbre

American Psychological Association
1400 N. Uhle St.
Arlington, VA 22201
(703) 247-7829
(800) 336-4980
PsycINFO

Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, CA 95014
(408) 996-1010
Apple II
Apple IIc
Apple IIe
Apple IIgs
Apple Personal Modem
Apple Scanner
AppleCD SC
AppleLink
AppleShare
AppleTalk
Communications Toolbox
ImageWriter II
LaserWriter
LaserWriter II
LaserWriter IINT
LaserWriter Plus
Lisa
Lisa Office
LocalTalk
Macintosh
Macintosh 512K
Macintosh Classic
Macintosh II
Macintosh IIcx
Macintosh IIfx
Macintosh Plus
Macintosh Portable
Macintosh SE
Macintosh SE/30
MacTerminal

Aries Systems Corp.
79 Boxford Street
North Andover, MA 01845
(617) 689-9334
Knowledge Server

Association for Educational Communications and Technology
1126 16th St., N.W.
Washington, DC 20036
(202) 466-4780
AECT

Broderbund Software, Inc.
17 Paul Drive
San Rafael, CA 94903
(415) 492-3500
(800) 521-6263
Print Shop

BRS Information Technologies
A division of Maxwell Online, Inc.
1200 Route 7
Latham, NY 12210
(518) 783-1161
(800) 345-4277
BRS Search

Caspr
2011 Stevens Creek Blvd., Ste.270
Cupertino, CA 95014
(800) 852-2777
Mac Library System (MLS)

Claris
5201 Patrick Henry Drive
Box 58168
Santa Clara, CA 95054
(800) 544-8554
(408) 987-7000
AppleWorks
FileMaker II
FileMaker Plus
HyperCard
MacDraw II
MacWrite II

Compaq Computer Corp.
20555 State Highway 249
Houston, TX 77070
(713) 370-0670
(800) 231-0900
Compaq DeskPro
Compaq Portable

CompuServe, Inc.
5000 Arlington Centre Blvd.
Columbus, OH 43220
(800) 848-8199
(614) 457-0802
Navigator

Dialog Information Services, Inc.
3460 Hillview Dr.
Palo Alto, CA 94304
(415) 858-2700
(800) 334-2564
Dialog

Digital Equipment Corp.
Maynard, MA 01754-2571
(800) 343-4040
VAX
VAX Server

Dream Maker Software
7217 Foothill Blvd.
Tujunga, CA 91042
(800) 876-5665
MacGallery

Fox Software, Inc.
118 W. South Boundary
Perrysburg, OH 43551
(419) 874-0162
FoxBase+/Mac

Freesoft Corp.
105 McKinley Road
Beaver Falls, PA 15010
(412) 846-2700
Red Ryder

GCC Technologies, Inc.
580 Winter St.
Waltham, MA 02154
(800) 422-7777
UltraDrive

General Electric Information Services
401 N. Washington St.
Rockville, MD 20850
(301) 340-4000
(800) 638-9636
GEnie

IBM Corp.
1133 Westchester Ave.
White Plains, NY 10604
(800) IBM-2468
IBM 3090
IBM PC
IBM PS/2

Information Access Co.
362 Lakeside Drive
Foster City, CA 94404
(415) 378-5000
(800) 227-8431
Computer Database
Trade & Industry Index
Magazine Index
Management Contents
National Newspaper Index

Informix Software, Inc.
4100 Bohannon Dr.
Menlo Park, CA 94025
(415) 322-4100
(800) 331-1763
Wingz

Library Interface Systems, Inc.
7900 International Drive, Suite 632
Bloomington, MN 55425
(612) 854-2189
(800) 234-5183
MacBook II Plus

Lotus Development Corp.
55 Cambridge Parkway
Cambridge, MA 02142
(617) 253-9150
Lotus 1-2-3

Microsoft Corp.
One Microsoft Way
Richmond, WA 98052-6399
(206) 882-8080
Microsoft *Excel*
Microsoft *PowerPoint*
Microsoft *Windows*
Microsoft *Word*
Microsoft *Works*

National Education Association
1201 16th Street, NW
Washington, DC 20036
(202) 833-4000
NEA Bulletin Board

National Library of Medicine
8600 Rockville Pike
Bethesda, MD 20209
(301) 496-6193
MEDLINE
MeSH

Novell, Inc.
122 East 1700 South
Provo, UT 84606
(801) 379-5900
(800) 526-5463
Novell Kinetics *FastPath*

OCLC Online Computer Library Center, Inc.
6565 Frantz Road
Dublin, OH 43017-0702
(614) 764-6000
OCLC

Pacer Software, Inc.
7911 Herschel Avenue
La Jolla, CA 92037
(619) 454-0565
PacerLink

Platinum s.a.
90, rue de Miromesnil
75008 Paris, France
(1) 45 63 36 62
Biblio-Tech

Prodigy Services, Inc.
445 Hamilton Ave.
White Plains, NY 10601
(800) 822-6922, ext.205
Prodigy

Public Affairs Information Service, Inc.
521 West 43rd St.
New York, NY 10036-4396
(212) 736-6629
(800) 288-PAIS
PAIS

Quantum Computer Services, Inc.
8619 Westwood Center Dr.
Vienna, VA 22182
(800) 227-6364, ext.5276
America Online

Quark, Inc.
300 S. Jackson St., #100
Denver, CO 80209
(800) 356-9363
(303) 934-2211
QuarkXPress

Radio Shack
700 One Tandy Center
Ft. Worth, TX 76102
(817) 390-3549
TRS-100

Radius, Inc.
1710 Fortune Drive
San Jose, CA 95131
(408) 434-1010
Radius Full Page Display System

The Research Libraries Group, Inc.
1200 Villa St.
Mountain View, CA 94041-1100
(415) 962-9951
RLIN

Richmond Software Corp.
P.O. Box 1744
Roswell, GA 30077
(800) 222-6063
Mac the Librarian

Right On Programs
755-S New York Ave.
Huntington, NY 11743
(516) 424-7777
On-Line MacCatalog

Serenity Partners
P.O. Box 3058
2201 Oyster Bay Lane
Gulf Shores, AL 36542
(205) 968-8165
Computer Assisted Library Management (CALM)

Shiva Corp.
1 Cambridge Center
Cambridge, MA 02142
(617) 252-6300
NetModem

Silicon Beach Software
9770 Carroll Center Rd., Suite J
San Diego, CA 92126
(619) 695-6956
SuperPaint

SilverPlatter Information, Inc.
37 Walnut St.
Wellesley Hills, MA 02181
(617) 239-0306
MacSpirs

Software Design
P.O. Box 12016
Des Moines, IA 50312-2016
(515) 279-9650
Copernicus

Software Ventures Corp.
2907 Claremont Ave., Suite 220
Berkeley, CA 94705
(800) 336-6477
MicroPhone

Sony Corp.
Sony Drive
Park Ridge, NJ 07656
(800) 222-SONY
Videodisc players

Telebase Systems, Inc.
763 W. Lancaster Ave.
Bryn Mawr, PA 19010
(215) 296-2000
(800) 841-9553
EasyNet

Texas Instruments
P.O. Box 202230
Austin, TX 78720
(800) 527-3500
Texas Instruments terminals

Ungermann-Bass, Inc.
3900 Freedom Circle
Santa Clara, CA 95054
(408) 496-0111
(800) 873-6381
NetOne

U.S. Department of Education
Office of Educational Research and Improvement
ERIC Processing and Reference Facility
2440 Research Blvd., Suite 550
Rockville, MD 20850
(301) 656-9723
ERIC

Upper Broadway Bodega
c/o Ann Bevilacqua
Box 855
Manchester, CT 06040
(203) 647-8104
Research Assistant

Voyager Corp.
1351 Pacific Coast Highway
Santa Monica, CA 90401
(800) 443-2001
(800) 446-2001
Beethoven's Ninth Symphony CD Companion
National Gallery of Art

The WELL
27 Gate Five Road
Sausalito, CA 94965
(415) 332-4335
The WELL (Whole Earth 'Lectronic Link)

H.W. Wilson Co.
950 University Ave.
Bronx, NY 10017
(212) 697-8400
(800) 367-6770
Applied Science & Technology Index
Art Index
General Science Index
Humanities Index
Library Literature
Social Sciences Index

WordPerfect Corp.
1555 N. Technology Way
Orem, UT 84057
(801) 225-5000
(800) 451-5151
WordPerfect

Zenith Data Systems
1501 Feehanville Dr.
Mt. Prospect, IL 60056
(708) 699-4800
(800) 553-0331
Zenith computers

INDEX

C

D

E

F

T

U

V

W

Z

About The Editors

Edward J. Valauskas, shown above recently dodging maniacal bus drivers on the streets of Leningrad, is founder, co-editor and chief bottle-washer of *Macintoshed Libraries.* He does the major editing and indexing chores for this publication and is always on the lookout for a good manuscript. He was recently named an Apple Teaching Fellow and leads a series of workshops on the Mac at his library. In his spare time, he can be seen in his familiar role as Assistant Director of the Merriam Center Library for Public Administration in the heart of the University of Chicago campus. Besides thinking up great scams, he collects Macintosh computers and their descendants as well as anything dinosaur-like. You can almost always find him lurking electronically on AppleLink and the Internet.

You can reach Ed at the following address:

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1313 E. 60th Street
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Phone: (312) 947-2161
Fax: (312) 947-2164
AppleLink: G0094
Bitnet: U25112@UICVM

Bill Vaccaro, shown right in an intimate moment with friends (that's him in the center just in case you're wondering), is co-editor and chief bottle dryer for *Macintoshed Libraries.* Bill's chief role in this cosmic design is to put all the finished manuscripts and graphics into the delightful display of desktop publishing pyrotechnics that you, gentle reader, are holding lovingly in your hands at this very moment. While doing all this, he simultaneously designs and scripts an electronic edition of this tome (published in *HyperCard* 2.0 format), putting to rest the age-old question "How *can* you be two places at once when you're really nowhere at all."[1] Also an Apple Teaching Fellow, he's been known to give an occasional workshop or two on such topics as *HyperCard, PageMaker* and *FileMaker Pro.*

When not on his backyard deck with Macintosh Portable in tow (he claims to use it for weight training), he can be found at the Chicago Public Library's Sulzer Regional branch in his disguise as Assistant Head of the Social Sciences and History Unit. He collects PostScript Type 1 and TrueType fonts as a hobby.

1. First postulated by Firesign Theater in the early 1970s.

Fan mail addressed to Bill can be sent to:

Conrad Sulzer Regional Library
4455 N. Lincoln Avenue
Chicago, IL 60625
Phone: (312) 728-8652
Fax: (312) 878-0860
AppleLink: VACCARO.B
CompuServe: 76266,147
Internet: vaccaro.b@applelink.apple.com

TOOLBOX

Hardware

Macintosh Portable w/2 Mb RAM; Macintosh IIcx w/5 Mb RAM; Macintosh IIfx w/4 Mb RAM; Apple Portrait Display monitor w/Apple Portrait Display card (IIcx); AppleColor RGB 13 in. Color Monitor (IIfx); Ehman 45 Removable Hard Drive; Apple Portable 2400 Modem (Portable); Apple Personal Modem (IIfx); Apple Scanner; Apple 40HDSC Internal Portable Hard Disk (Portable); Apple 80HDSC Internal Hard Disks (IIcx and IIfx); AppleCD SC Drive (Portable)

Software

System 6.0.5 and System 6.0.7 (operating system); Claris *MacWrite II* 1.1, CE Software *MockWrite*, and Microsoft *Word* 4.0 (word processing); AppleLink, Software Ventures *Microphone II* 3.0, and Freesoft Corp. *White Knight* 11.10 (telecommunications); *BinHqx* desk accessory (file conversion - shareware); *Flashit* v. 2.1 and 2.2b1 control device (screen capture - shareware); Aldus *PageMaker* 4.0 (page layout); Fifth Generation *Suitcase II*, Apple *TrueType* INIT, Adobe *Type Manager 2.0* and *Type Align 1.0* (font handling, special type treatments); CE Software *QuickKeys* 2.0 (macro utility); Claris *MacDraw II* 1.1 and Silicon Beach *SuperPaint* 2.0 (bitmap and PICT graphic editing and touchup); Apple *AppleScan* (grayscale TIFF scans of photographs); Adobe *Illustrator* 3.0 (cover art)

Type

Body text faces (Adobe)

ITC Garamond 11/14 pt (body text); ITC Galliard 16/18 pt (lead paragraph); Courier 9/12 pt (HyperCard scripts); Futura Condensed 11/14 pt (captions and author biographies); ITC Galliard Italic 18/auto (pull quotes); Futura Condensed Bold 11/14 pt (body text subheads); Copperplate 31AB 12/14 pt (titles of articles in Table of Contents); Helvetica Light 12/14 pt (subtitles of articles in Table of Contents); Futura Book 12/16 pt (author names in Table of Contents); ITC Garamond 9/12 pt (abstracts in Table of Contents); Futura Heavy 16/18 (lead paragraph subheads); ITC Garamond 9/12 pt (footnotes); and Garamond 10/12 pt (body text for inserts).

Display Text Faces

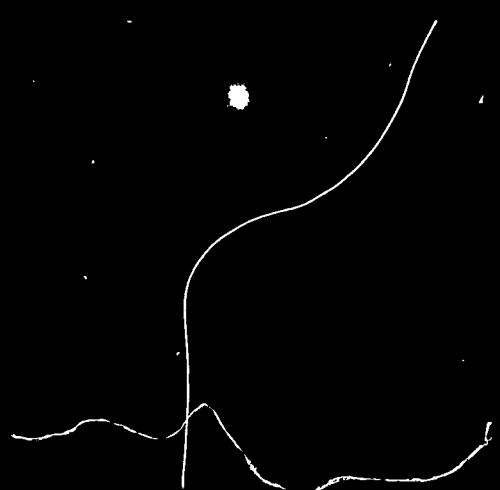
Cover Art: Copperplate 31AB, Futura Extra Bold, and Lithos Bold (Adobe).
Headlines and Accents: Architect (freeware - TrueType); Biffo MT (Monotype - TrueType); CarrickCaps (freeware); Century Old Style (Adobe); Charter BT (Monotype - TrueType); Copperplate 31AB (Adobe); Dragonwick (freeware); Embassy BT (Monotype - TrueType); Futura Bold, Futura Extra Bold, Futura Condensed Extra Bold, Futura Condensed Light, Futura Heavy (Adobe); GoudyHundred (freeware); ITC Garamond Bold (Adobe); IsadoraCaps (freeware); LightsOut (freeware); Manzanita (freeware); MiamiNights (freeware); Middleton (freeware); New Century Schoolbook (Adobe); Old Style MT Bold (Monotype - TrueType); Peignot Demi (Adobe); PsychedelicSmoke (freeware); RansomNote (shareware); Rhyolite (shareware); Riverside (freeware); Sans Serif (Monotype - TrueType); Showboat (True Type - Freeware); SlabFace (freeware); Stencil BT (Monotype - TrueType); UpperWestSide (freeware); WindsorDemi (freeware); and Zapf Dingbats (Adobe). All freeware/shareware fonts used in this publication are available for your downloading pleasure on CompuServe's ZMac and Desktop Publishing Forums.

Miscellaneous

The image of Mary Ellen Bercik was captured on a RasterOps video board installed on a Macintosh II series computer. The digitized image was then touched up by the author using Adobe *Photoshop* and transmitted to the editors electronically via AppleLink. The image of Alan Rowoth is a grayscale TIFF file supplied by the author.

Output

The cover pages and page 3 were printed on an Apple LaserWriter IINTX printer. All other camera-ready copy was produced on an Apple LaserWriter IISC printer on Hammerhill Bond *Laser Print* white long grain 524/60 8 ½ x 11 paper. Reproduction was done using traditional photomechanical methods.



Apple Library Users Group
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